

E ARCHITECTURAL FORUM / JUNE 1970



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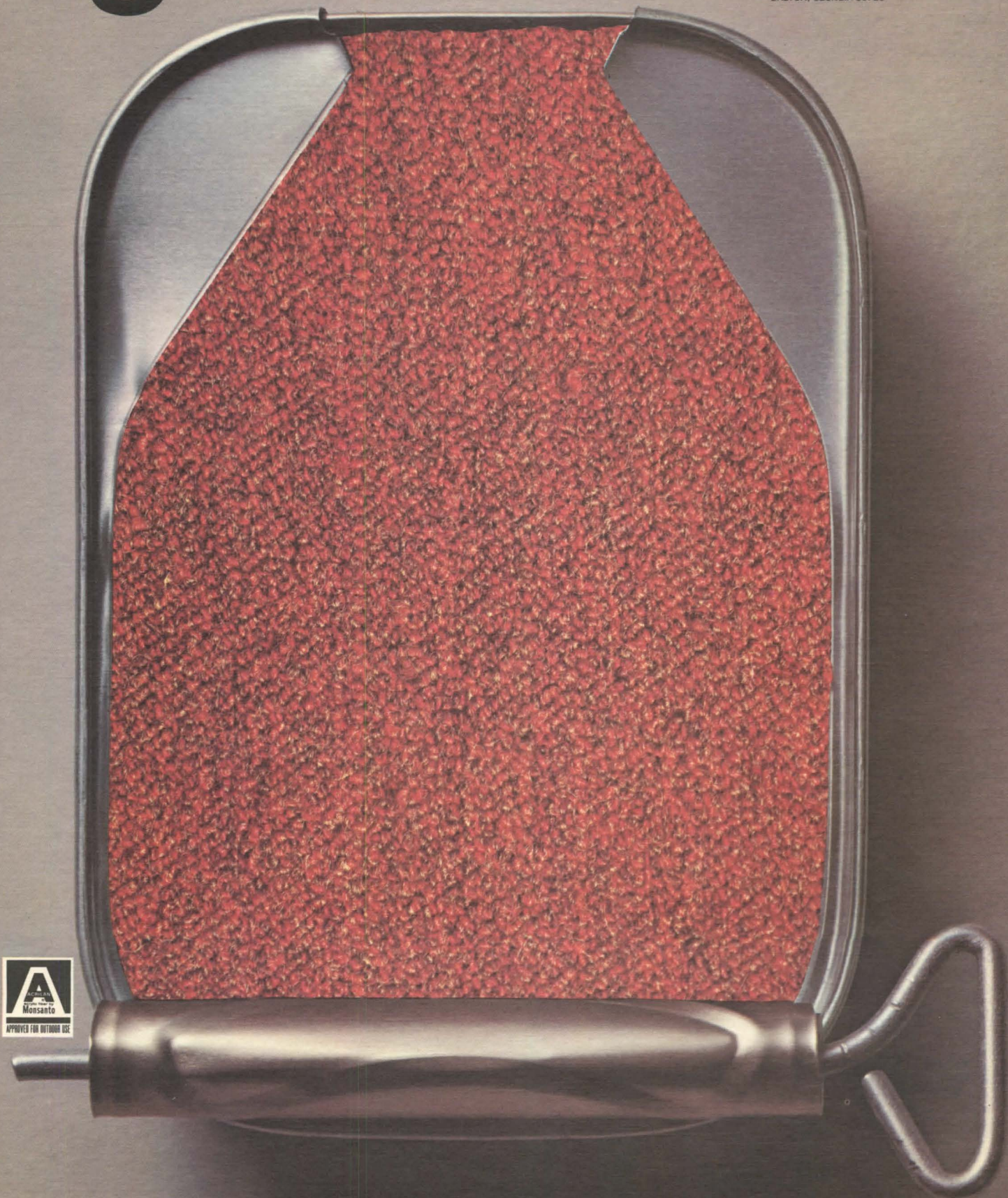
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Cover: Design by Charlotte Winter based on Korah Collegiate School in Ontario, Canada (p. 50).

THE ARCHITECTURAL FORUM Vol. 132 No. 5 June issue.

Published 10 times a year, combining Jan./Feb. and July/Aug. issues, by Whitney Publications, Inc., 130 East 59th St., New York, N.Y. 10022. Sent without charge to architects registered in the U.S.A. and Canada. Qualified persons are invited to write the Circulation Manager on company letterhead. Please give your principal state of architectural registration, your title, and the kind of work you do. Correspondence regarding service, change of address, etc., should be sent

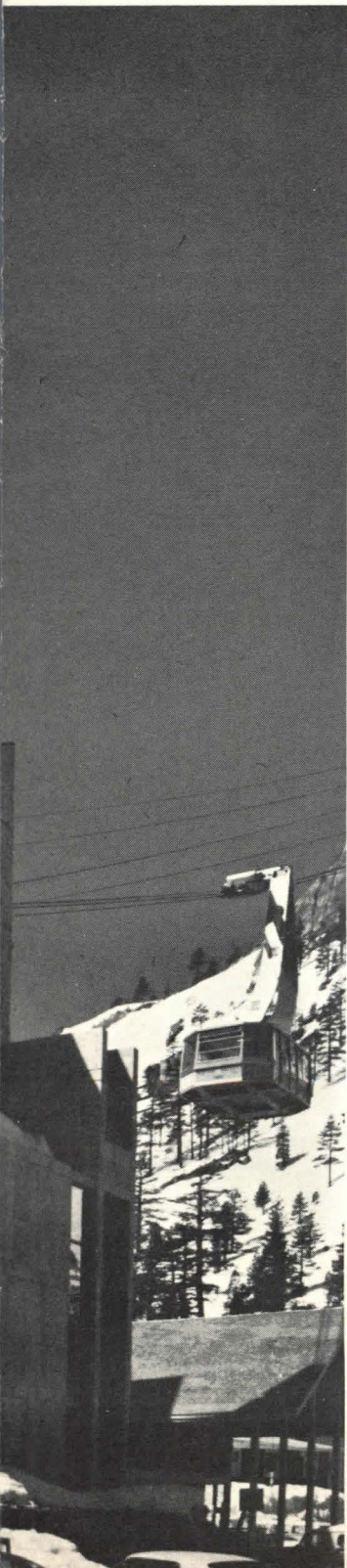
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Dover designed a special Oildraulic® Elevator to meet the unusual requirements of the Squaw Valley Cable Car Terminal at Olympic Valley, California. The car measuring 11' 6" x 28' will take 120 skiers (one cable-car full) from the main entrance level to the cable car level. The car is glass-walled, and moves in a glass-enclosed hoistway with no clutter of overhead cables or machinery. Total lifting capacity of 45,000 lbs. is provided by the powerful Dover Oildraulic cylinder and power unit. ARCHITECTS: Shepley, Bulfinch, Richardson & Abbott, Boston, Massachusetts. GENERAL CONTRACTOR: Campbell Construction Co., Sacramento, California. PHOTOGRAPHER: Julius Shulman, Los Angeles. Dover Oildraulic Elevators installed by Valley Elevator Co., Sacramento, California.



Dover delivers

elevators to give a lift to 120 skiers at once,
or to a single handicapped child.



At Litchfield Junior High School, Litchfield, Conn., a Dover Continental Oildraulic Elevator was installed so that handicapped students might move more easily among the three classroom levels. Like the school, the elevator is distinctive, being pre-engineered to fit a specified hoistway size and thus saving on engineering costs and delivery time. OWNER: Town of Litchfield, Connecticut. ARCHITECT: John M. Johansen, FAIA, New York City. GENERAL CONTRACTOR: C. H. Nickerson & Co., Inc., Torrington, Connecticut. PHOTOGRAPHER: John Veltri, New York City. Dover elevator installed by Eastern Elevator Co., New Haven, Connecticut.

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This also helps you work better.

And, a unique trim channel on the outer shell protects both chair and desk from getting all nicked up, and saves you from aggravation.

This has to help you work better.

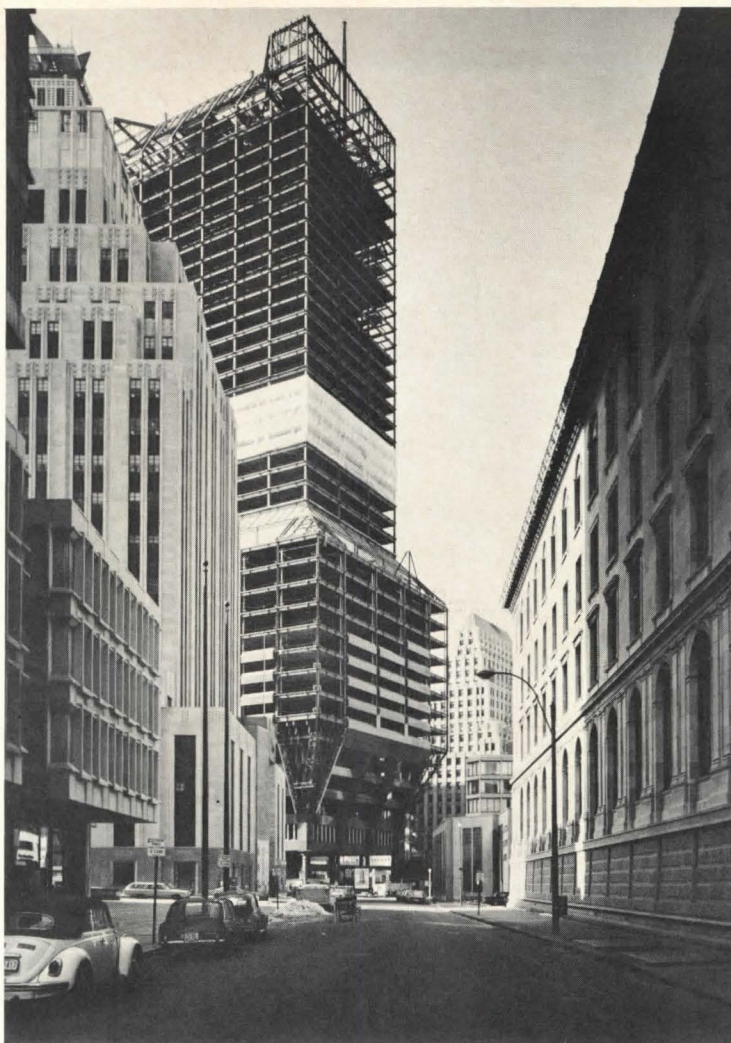
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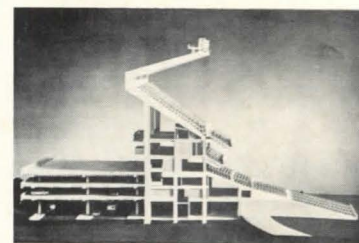
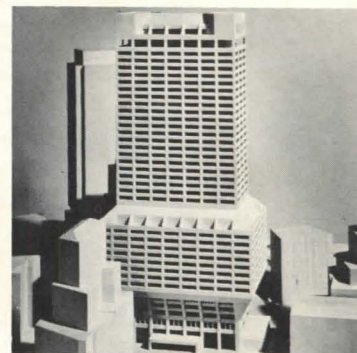
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BANK WITH A BULGE

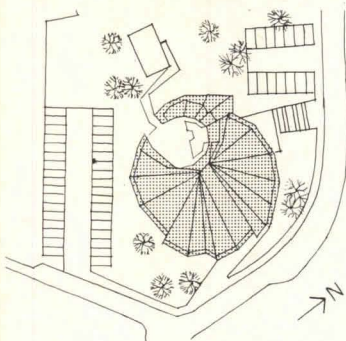
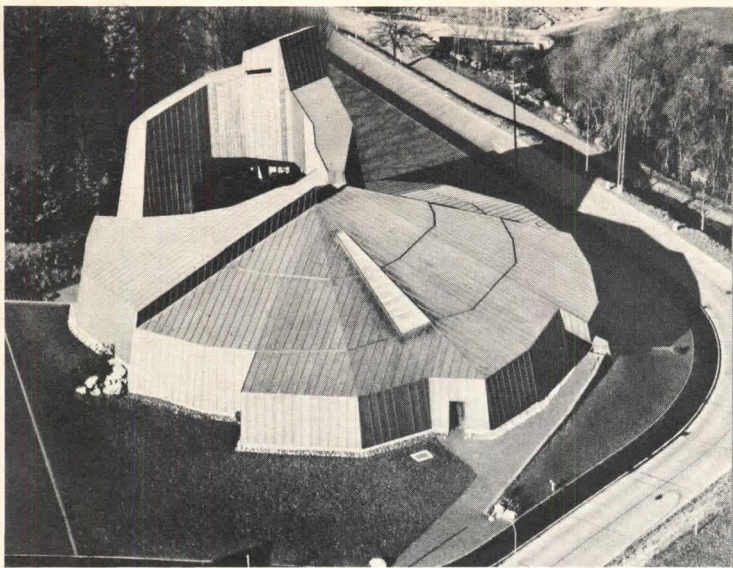
Bringing to mind the world-famous Torre Velasca in Milan, the First National Bank of Boston's new headquarters begins to take shape in Boston's staid old financial district. The bulge, however, has slipped. Architects for the bank, Campbell, Aldrich & Nulty, set the first six stories back, and above that designed an eight-story protruberance to make up for space lost in the setback. In this way the bank leaves 30 ft. on each side for an enlarged plaza. Above the bulge the bank will rent out all space (on a short-term basis on lower floors so the bank can expand into them as need be, and on a long-term basis for the rest), except for a top-story dining room. Total cost of the 1,460,000-sq.-ft structure will be about \$40 million.



CINCINNATI STADIUM

The opener for the baseball season this month for hometown Reds vs. the Braves is the Cincinnati-Hamilton County Sports Stadium. Designed by Heery and Heery-Alexander and Rothschild, associated architects, the structure is built in four levels over a triple-deck parking facility. At 36 acres, these three decks comprise the largest parking facility of its type in the country. Up to 20,000 cars can park within 12 blocks.

The stadium itself is 700 ft. in diameter; it can convert from a 51,000-seat baseball arena to a football stadium seating 56,000. It is the first outdoor stadium to use a complete playing surface of Astroturf. Cost: \$45 million.



CASTLE-LIKE CHURCH

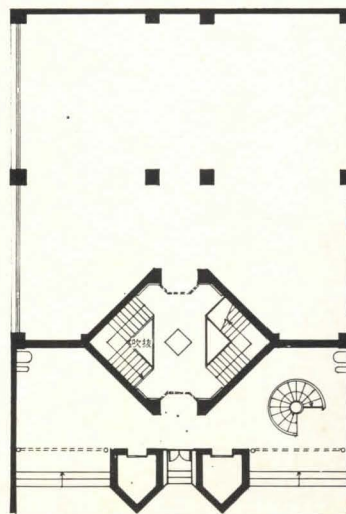
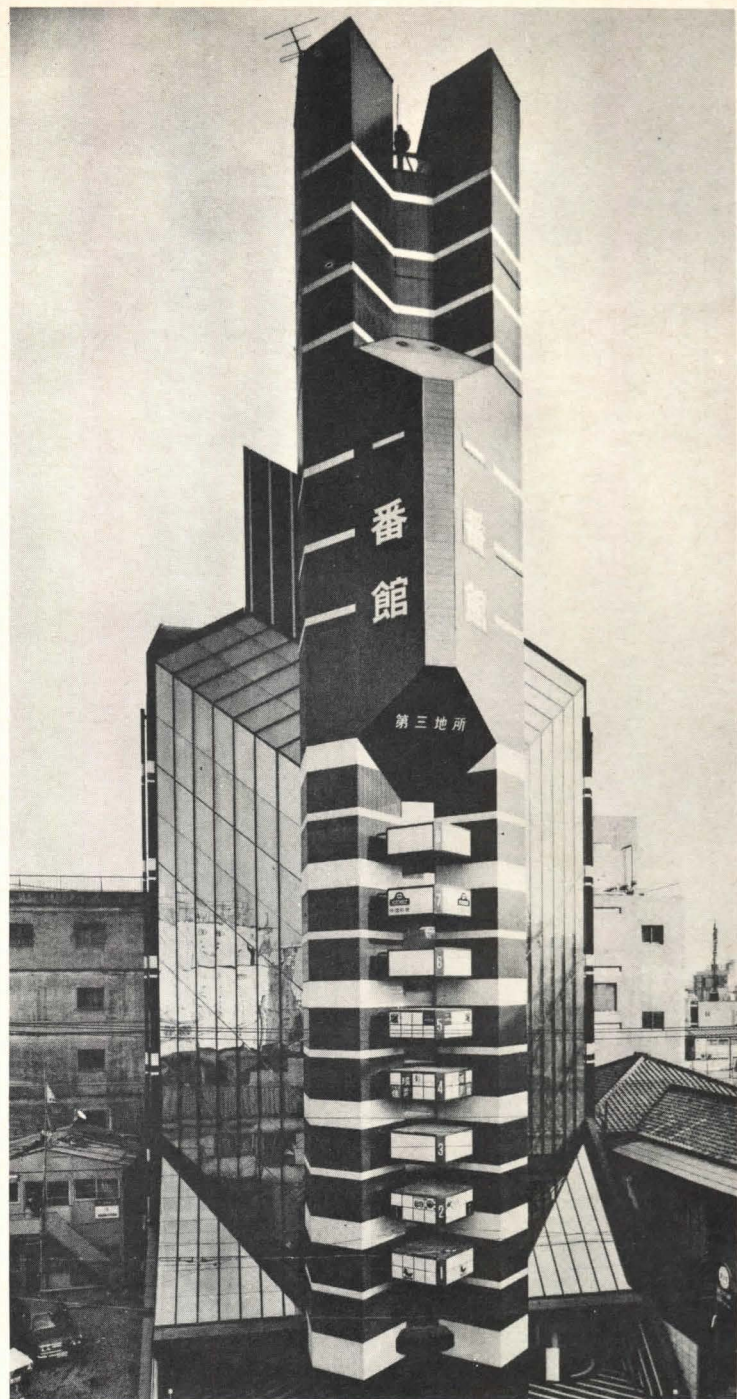
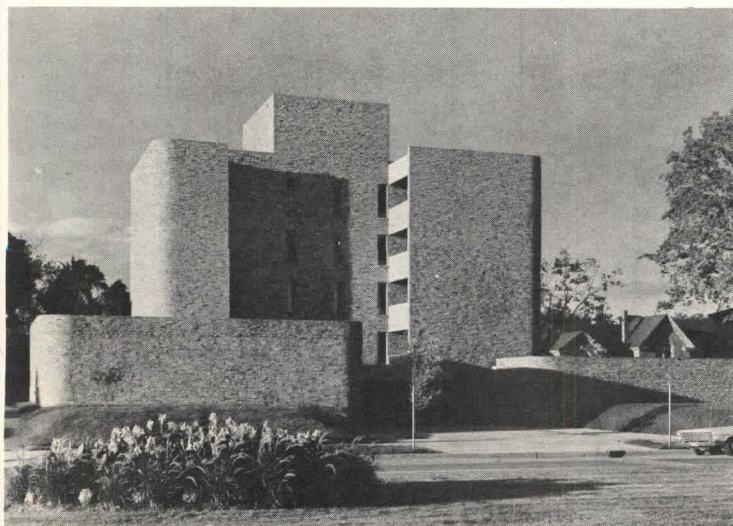
The Roman Catholic Church of St. Anthony in Wildeg, Switzerland, looks rather like a castle and was, in fact, designed by Architect Justus Dahinden to relate to one on a nearby hill. The

teepee-like facets of the structure are staggered over a sloping site; entry is by tunnel into an enclosed open court (see plan). The windowless interior is lit from skylights around the central supporting tower.

SOLIDITY FOR SOCIAL SERVICES

The Lutheran Social Services brick-faced office building in Milwaukee, Wisconsin, had to reconcile two separate and distinct functions: it had to house the headquarters staff for the state agency, and also offices for

Milwaukee area services. Architects William P. Wenzler and Associates placed the headquarters on ground level so that it could expand horizontally, and the local services in a five-story tower which can expand upward to eight stories.



TOKYO'S NUMERO UNO

The Ichi-Ban-Kan "Omni-Rental-Store" in downtown Tokyo is, as its name translates. "Number One Pavilion," the first in a proposed chain of buildings that can be used by stores, eateries and the like on a rental basis. This particular tower rises eight stories near the newly-developing Shinjuku commercial district. A balcony on each floor is accented by graphics describing what is to be found there. These are flanked by mirrored panels, and by elevator shafts. Stores share a common area. Minoru Takeyama Architect and the Collaborative designed.

IBM AT EXPO

"Man, the Problem Solver" is the theme of IBM's pavilion at Expo 70 in Osaka, Japan. To live up to this, IBM stocked the pavilion with computers and all visitors are encouraged to participate in computer "games" at any or all of 12 "terminals" relating to the computer system.



Pulliam, Matthews and Associates were architects of the cube-shaped white aluminum theater (seating 500 for a film called "Man and Demons"), and a canopied open plaza of steel frame and reinforced concrete for the exhibits. Rosenthal and Associates were designers of the graphics and the exhibits.



EASY EXIT

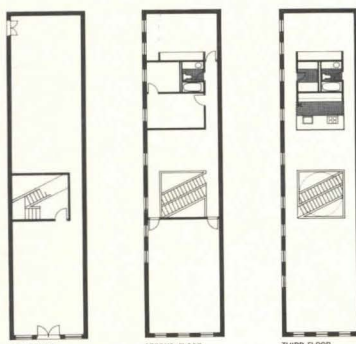
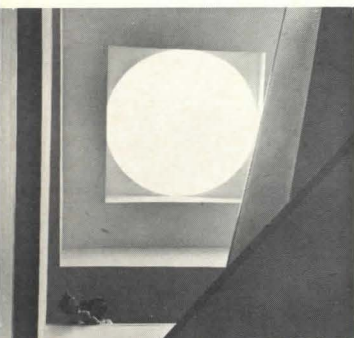
A special requirement for the New Canaan Country school, a private elementary school in Connecticut, was that each of two classrooms for kindergarten through third grades, and rooms for conferences, etc., lead di-

rectly to the outdoors. Gary Lindstrom & Associates' design does just that; and all rooms radiate from a central multi-purpose area which can be used for assemblies. The structure is painted white to blend with existing white clapboard buildings.

GRANITE-FACED GATEWAY

Dedicated as the gateway to the "Financial Center of the West," the Aetna Life & Casualty Building in San Francisco stands at the "corner" of that district. The building, occupying only 55 per cent of its triangular lot, rises 38 stories, and is set on a 45-deg angle to the plaza. Wel-

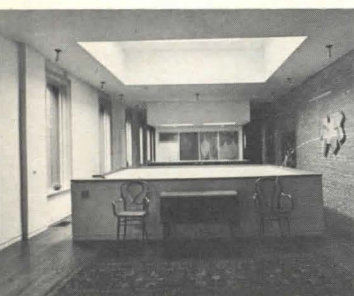
ton Becket & Associates, who were architects and engineers, designed the structure as an octagonal tower of all-welded structural steel frame sheathed in 1-in.-thick dark granite slabs bonded and anchored to precast concrete backing. Between the strips of granite are bronzed-tinted windows.



REMODELED LOFT

The remodeling of a loft north of the Chicago Loop has its focus on a unique stairwell. Booth & Nagle, Architects/Planners designed the stairwell as a perfect 11-ft. square, with the stairs themselves angling across at diagonals on each floor. A skylight (top photo), capped by a dome, is of the same square dimensions as the well.

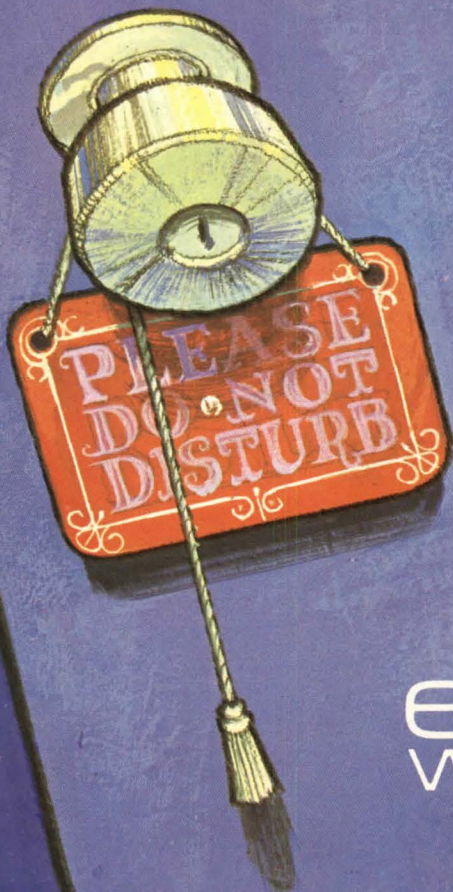
The loft is divided into three floors, with the living areas, for the owners—a painter couple—and their two teenage children, above, and the studios beneath. The third floor (looking in both directions, bottom photos) is open for dining and living rooms, and beyond is the master bedroom, which is approached by two open corridors along the walls, with a partition setting off the area from the stairwell.



(continued on page 9)

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THE QUIET SUPER-CORE DOOR



Privacy is a closely held treasure in high density environments. But even with a brusque sign on the door, privacy is lost if irritating noise intrudes. Loud television, heavy steps, shouts, the whirr of machinery, they all can sap the spirits in apartments, hotels, motels, hospitals, nursing homes and offices. Progressive architects and builders take pains to sound-deaden the walls and floors, but what about that significant sound path, the doorway? More and more, those openings are being closed by Amweld's Quiet Super-Core Door. It brings to the job a Sound Transmission Class rating of 33 decibels for the full door/frame assembly under operating conditions with no fancy, annoying baffles. The effect is lasting, because the super-Core never ages. Smooth or leather grain texture gives it the charm to complement the smartest of decors. Specify Amweld Super-Core and you'll hear the last of it. For full details, check the Yellow Pages under "Doors-Metal" for Amweld's distributors, or write directly.

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FOCUS

(continued from page 7)

SLIM STACK FOR STEAM

Sprouting above the skyline of downtown Toronto, Ontario, is the chimney stack of the new Walton Steam Plant. The plant serves four major hospitals and related facilities, and is, according to its architects, Mathers & Haldenby, designed to burn fuels which will create a minimum of air pollution. The plant and the chimney stack are structurally independent of each other; and an expansion joint separates the two. Materials of construction are steel framework and precast concrete panels. Structural engineers were C. D. Carruthers & Wallace Consultants Ltd.

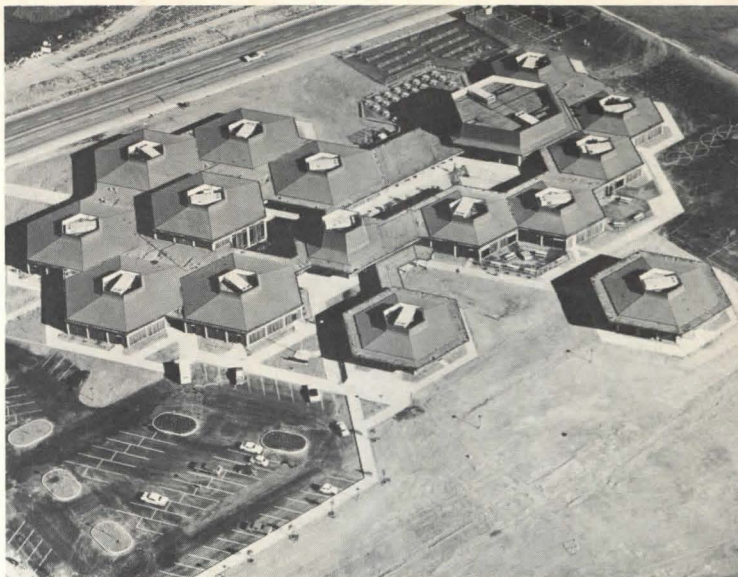


FOR CONGRESS AND CONCERTS

The last work of Dutch architect Dr. J. J. P. Oud is the Netherlands Congress Center in the Hague. After Oud's death, his son guided the construction of the building. The building can accommodate large congressional gatherings in a main auditorium, where concerts and

other cultural events may also be held. Smaller theaters with dressing rooms, information desks, a restaurant and various meeting rooms are also housed in this structure.

Entrance to the congress hall is through a huge covered main lobby with murals by Artist Karel Appel.



CLUSTERED SCHOOL

The scattering above is the Bowditch Middle School in Foster City, Calif. Sixteen inter-connecting hexagonal units, each 80-ft. in diameter, provide 94,000 sq. ft. of interior space. Architects Porter-Jensen & Associates chose a laminated wood beam system of spokes to support the hexagonal roofs; the spokes radiate from center columns and mobile partitions provide smaller teaching areas.



COMPLETING A PLAZA

The formal, planted ellipse of Center Plaza designed by RTKL Inc. for Charles Center, Baltimore, is finally complete. Mies van der Rohe's One Charles Center (left in photo) is on the same axis as the ellipse and is tangent to it; his monumental stair finally has a destination. An upper level plaza overlooks the ellipse; parking is below.

PHOTOGRAPHS: Page 5 (top), Phokion Karas. Page 6 (top left), Comet; (bottom left), Robert A. Dorn. Page 7 (bottom left), Jonas Dovydenas; (top right), Stan Benham. Page 9 (bottom left), Jan Versnel; (bottom right), Norman McGrath.

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PREVIEW

UNDERGROUND CYBERNETIC TOY ON A PLUG-IN LAND BEACH

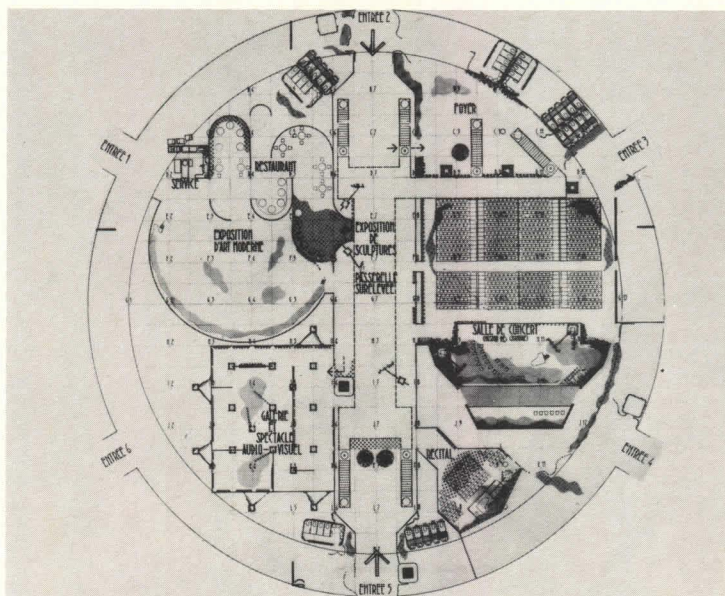
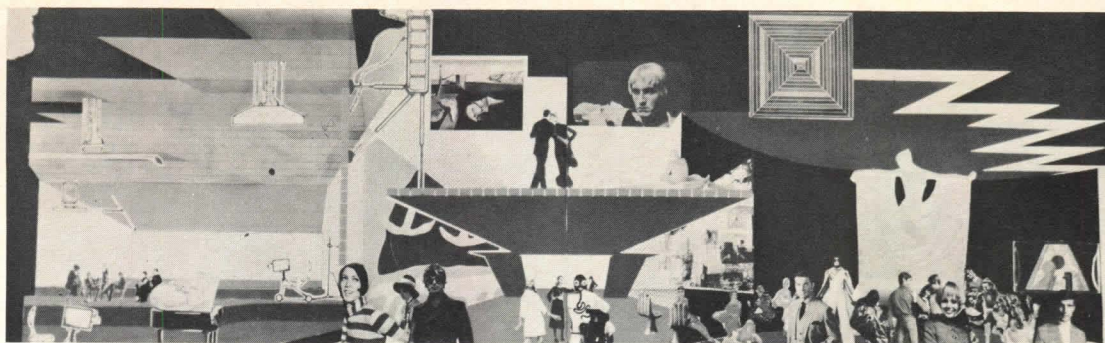
London's Archigram Group has won an international competition for a new entertainment center to be built on the reclaimed foreshore of Monte Carlo. The drawings and photographs on these pages show Archigram's proposal. It is best described in the words of the intrepid designers themselves:

"The building will be totally underground, with a large, uninterrupted circular space 260 ft. in diameter. Almost any show can be provided, including ice hockey, the circus, large banquets, theater, audiovisual exhibits, go-karting and sports. To make this possible, Archigram is designing a series of approximately 20 different robot-type machines which plug into a service grid above and below. Everything, including the seating, lavatories, stages and walls will be movable and the 'architecture' of the building will depend upon the wishes of the producer of the show. There are six entrances—so the layout of the building can be constantly changed. The building is seen as a giant underground cybernetic toy in which the architecture plays a similar role to the equipment in a television studio.

"Since Monte Carlo has very little open space, the entire site will consist of a 'land beach' which is an open park immediately adjoining the sea. It is proposed that this will also be serviced by a system of hidden appliances buried just below the grass, and it will be possible (by renting a special attachment) to plug into air, electricity, sound and telephone—you can dial for drinks from anywhere in the park. . . .

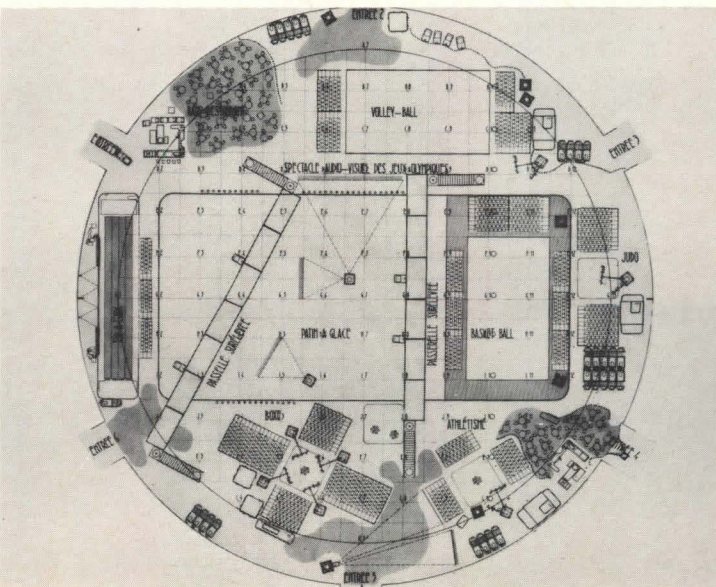
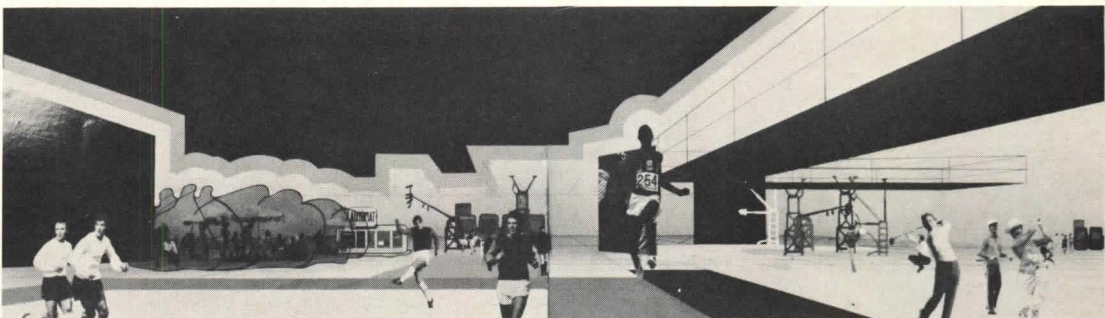
"One edge of the complex will consist of a giant electronic wall, which will show in electrical pictures what is on on the Côte d'Azur, and relay world news."

The Archigram Group Design Team consisted of Peter Cook, Dennis Crompton, Colin Fournier, David Greene, Ron Heron, Ken Allinson and Tony Rickaby. Total cost of the scheme will be around \$7.5 million, and construction is expected to start late in 1971.



CULTURAL EVENT

This variant is deliberately 'architectural' and formal (possibly reflecting the formality of the arts bit generally). Trace for yourself the typical, 1960's linear planning, the GLC auditorium, spot the wave in the direction of Mies van der Rohe, Johansen, Venturi and the rest. The concert hall employs a baffle of screens and the small exhibition hall is equally intensely serviced. In situations such as this, the features area can be demonstrated as a useful facility in Monte Carlo as a television, broadcasting, or recording studio which Radio Monte Carlo could well make use of.

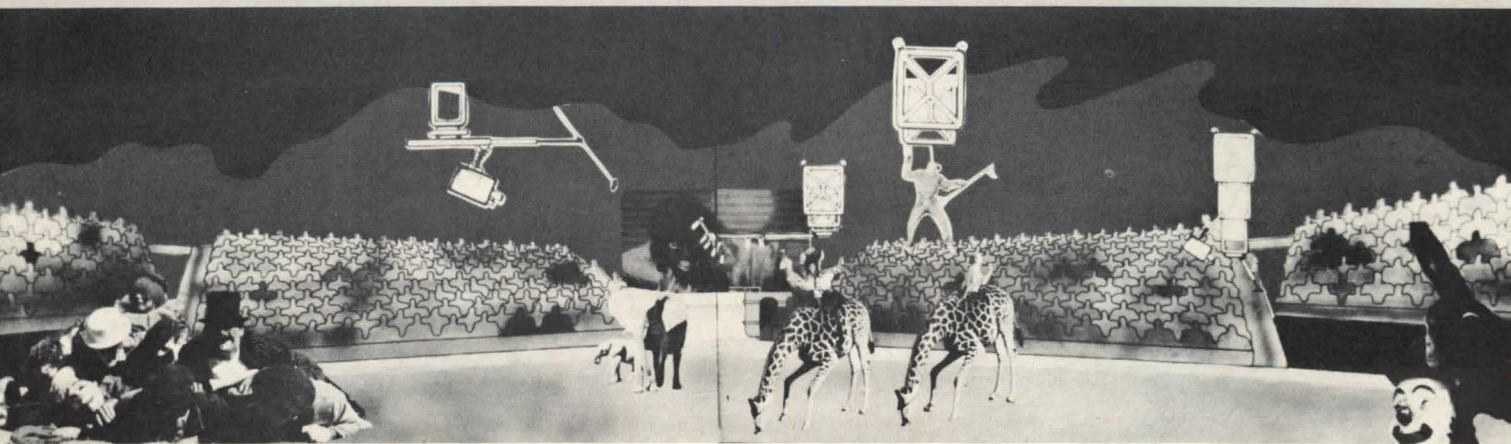
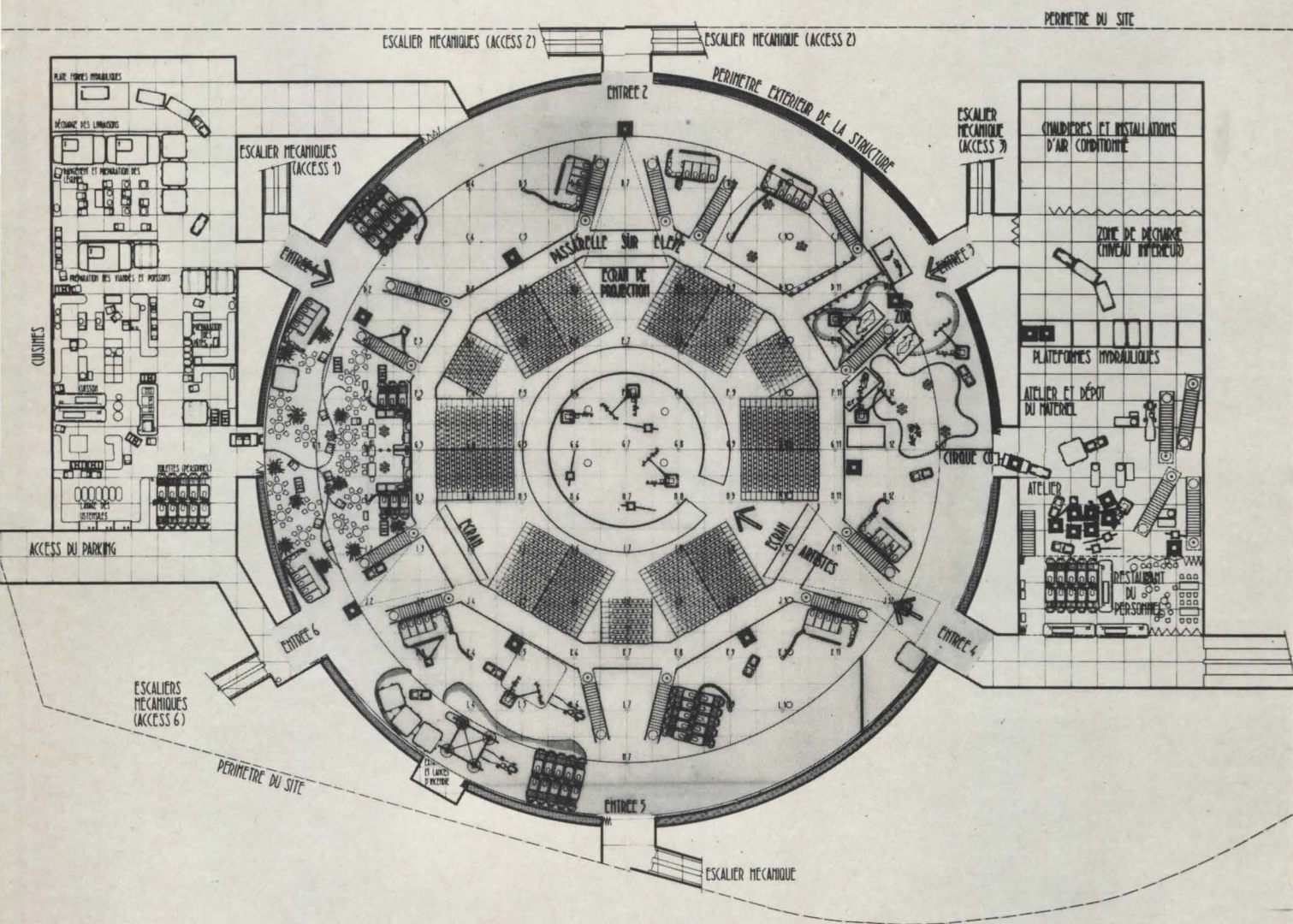
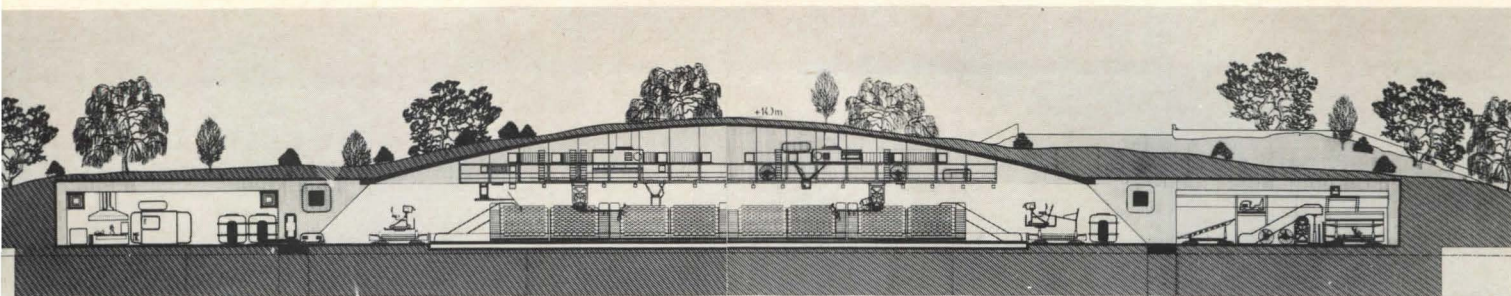


SPORTS ACTIVITIES

This is suggested as a free-forming conglomeration of pastimes, open to the general public. The special sporting equipment is added to the standard 'features kit' to provide for a series of 'rings' for boxing, judo, etc., and a number of formations made up by moving around the platforms, seating units and capsules. A restaurant is organized so that people can eat and watch the goings-on. There is a high level walkway for the passive, general spectator. The ice rink here is half the total possible frozen area.

CIRCUS

The circus ring centers on the basic circle. The mobile seating is arranged to carry 1,350 people. A high level promenade is suspended around the outer circle of the seating: from this you can descend down through the zoo area or through the restaurant. From the promenade you can watch the circus or just the general scene.



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CUSTOM MADE STEEL WINDOWS



Photo by Ezra Stoller (ESTO)

Inland Steel Company Research & Development Laboratories, East Chicago, Indiana
Skidmore, Owings & Merrill, *Architects/Engineers* • Power Construction Inc., *General Contractor*

The large fixed windows comprising the window walls in this extensive laboratory complex were carefully engineered in close cooperation with the architectural designers. Special attention was given to windload, glazing and installation. All window frame components (head, jamb and sill members) were machined from light structural steel beams and hot-dip galvanized before assembly. From the outset all Hope's efforts in engineering, fabrication and erection were directed towards producing an installation of custom steel windows which would require minimal future maintenance.

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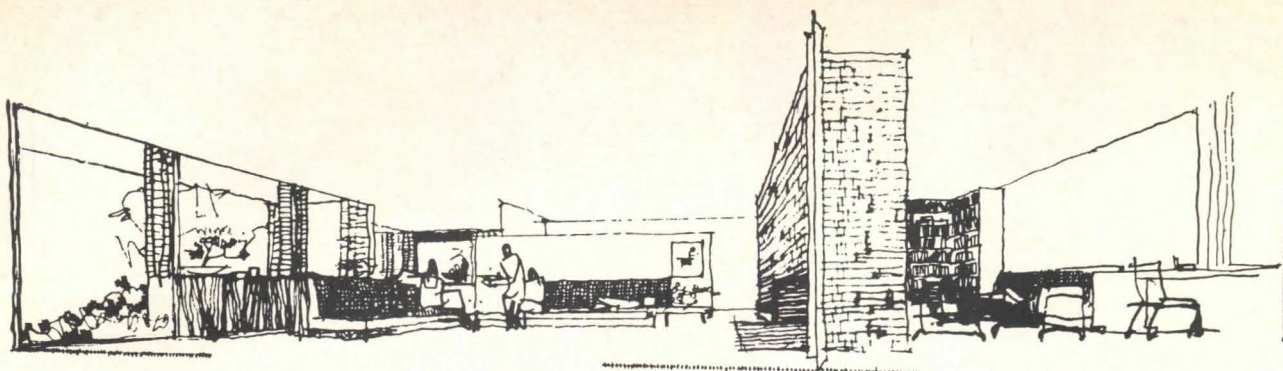
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DRAWINGS OF ARCHITECTURAL INTERIORS

Edited by John Pile

Good design is hard to come by—and often *even harder to explain to the client who invests in it.*

Only the realism of a sketch, perspective or “rendering” can bridge the communications gap between the designer and his client. Philip Johnson has been quoted as suggesting that clients like renderings even better than they like buildings.

That is why this handsome new book, *Drawings of Architectural Interiors*, may be immensely valuable to you. When you face the formidable problems of visualizing your own design ideas, this book can give you an inspiring view of the visualizations that the great champions of modern design have created to present their most challenging proposals.

How did Le Corbusier’s proposal for a country home interior virtually set the style for modern architectural sketching? How did Florence Knoll Bassett propose her plan for a new office suite to the President of CBS? How did Frank Lloyd Wright sketch imagined interiors with such foresight that they correspond almost exactly to the photographs that were finally taken? What were the sketching techniques that Walter Gropius, Mies van der Rohe, Richard Neutra and I. M. Pei employed to make their inventive ideas clear and dramatic?

You’ll find in this book a rare selection of sketches with rich commentary by John Pile, a man remarkably well-qualified for this undertaking. Architect, designer, teacher and writer, he has made architectural drawing his personal field of expertise. Pile began his book in an effort to assemble, coherently, a range of examples of the best interior renderings. In his final selection, he not only excluded mediocre renderings, but good renderings of mediocre architecture (which he found surprisingly common). He chose 146 drawings (29 of them in full color) representing the work of 83 outstanding designers and renderers.

Illustrations are accompanied by a fascinating text in which Pile traces the evolution of rendering techniques from historical origins through the 1950’s and 60’s. He traces the relationship between design trends and rendering techniques, and also explores the interaction between creative personalities and drawing styles.

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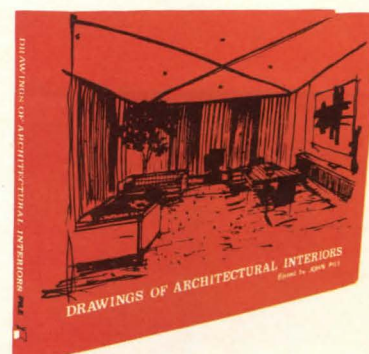
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LETTERS

ON TIME

Forum: The Breakthrough article in your April issue is not only the best, but the only intelligible quick showing of what all the Breakthrough winners propose. Congratulations!

P. I. PRENTICE
New York City
Time Inc.

ON ACTION

Forum: Center of Action [April]—you are to be congratulated on this exceptional article. This type and high calibre of cogent architectural writing is extremely rare and very valuable to the profession. Perceptive, yet not arrogantly architecturally didactic, the article is exemplary relative to content, presentation and intent. Your debilitation of past architectural criticism of the (now historical) winning DeMars and colleagues design was judicious and eminently justified. As I remember, their design was

subjected to excessive criticism characterized by architectural pedantry at its worst. This type of article, an architectural re-evaluation from the aspect of a behavioral setting for people, is laudable and should be a regular feature of the FORUM.

ARTHUR K. OLSEN
Salt Lake City
Architect

ON LIGHT

Forum: Your comments on our completed designs will always be welcomed. However, comments in the article describing Eliot Noyes' Columbus Junior High [April] are premature.

At the time of your critique, nine of 24 luminaires in the Commons were not operative. The potted plants and portable display surfaces planned for the Commons area have not been installed. These vertical surfaces, when in place and spotlighted from the balcony facias, will

provide areas of brightness, thus increasing the sensation of light.

In the library, the stack lights, which emit 50 per cent of their energy upward to the ceiling (thereby contributing to the general lighting) had not been installed. Both the aforementioned items remain on the punch list as of this date.

Once the job is completed, we feel confident that the users will have no cause for complaint, and that you will still find the lighting "imaginatively used."

SYLVAN R. SHERITZ
West Haven, Conn.
Lighting designer

CREDIT DUE

The illustrations to the story Capsules Replace Hospital Rooms (May issue) do indeed have an artist and should have been credited to him. He is David Morgan, of New York.

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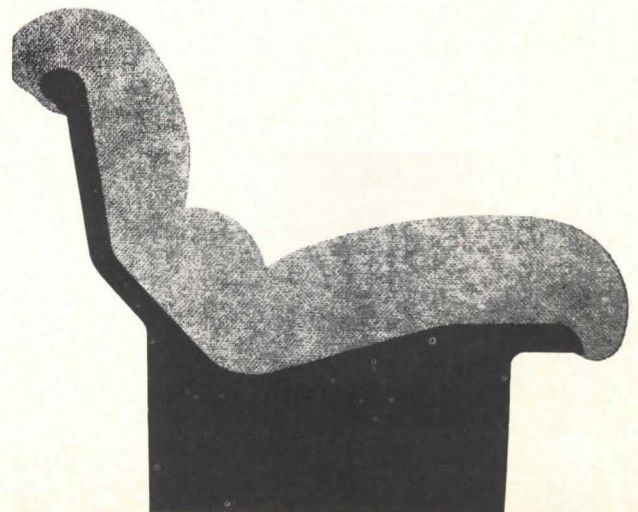
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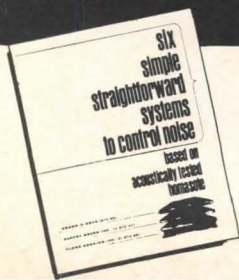
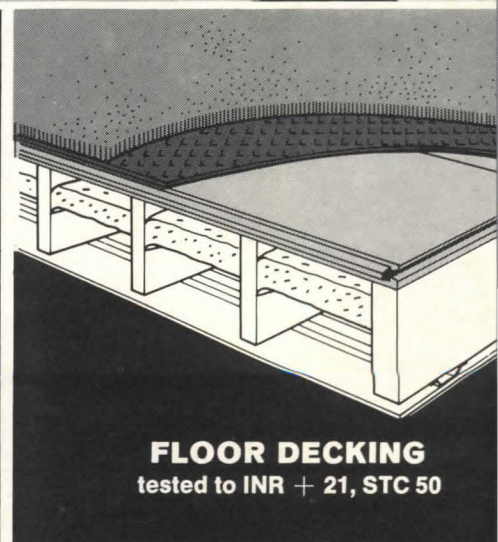
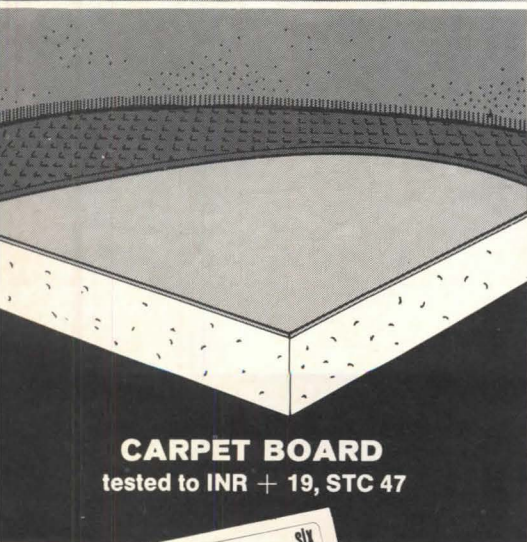
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FORUM



THE WAR COMES HOME

Nowhere were the nation's divisions more evident last month than in New York City, on a single day, in a single industry—our own.

Hundreds of "Architects and Planners for Peace" marched down Fifth Avenue from 59th Street to 23rd Street (above) carrying black banners and placards in mourning for the four students killed at Kent State University in Ohio. Sponsored by many prominent professionals, including David Todd, president of the New York Chapter of the AIA, the group rallied at Madison Square where they read aloud the tough telegram they were sending to the President. It demanded "a restructuring of the nation's priorities so we can start the work we have dedicated ourselves to . . ."

But further downtown, on Wall Street, some 500 members of various building trades unions were roaming the streets looking for blood. Heard from for the first time on this issue, they scorned the constitutional avenue of free speech and lashed out in a wild melee, beating up several dozen young people with wrenches, lead pipes, and hard hats. They waved the American flag and chanted "U.S.A. All The Way!" (right). Then, while police stood by, they struck down demonstrators, their wrath extending to bystanders who si-

lently raised the peace symbol, or wore their hair long, or pleaded for reason. (One bloodied bystander was a business-suited young Wall Street lawyer who is running for the New York State Senate.)

Normally, construction workers are a bit more discriminating in whom they attempt to put out of commission: blacks and members of other minority groups who think they have the right to a job in the building field (see following story). The hard-hats' fire this time was, at least, indiscriminate.

In the following days, police, reinforced by the scores, kept the construction workers a fist's-length away from demonstrators. Reduced to free speech, they shouted barroom epithets across police barricades. And no one



could be heard. There were those who were trying. Perhaps unread by many of the hard-hats was this letter in the *New York Times*:

"I want to talk to the New York construction workers. They will know what I'm saying. I grew up on the streets of Brooklyn, in a tough Irish-Italian-Polish neighborhood. I talk Brooklynese.

"I march with the students, and I think that the construction workers should be marching with the students. What happens to me doesn't matter. One Nobel Laureate has already been killed. That was Martin Luther King. What happens to the kids—their kids, my kids—matters very much.

"I want to talk to them. Any time, any place. How about it?"

It was signed, George Wald, Nobel Laureate in Physiology and Medicine, Cambridge, Mass.

WATCHING PHILADELPHIA

The Nixon Administration's contribution to civil rights programs, the Philadelphia Plan (Dec. '69 issue, page 21), sets minority hiring goals for the construction industry. The results, so far, have been disappointing. "All the reports are not in yet," says Benjamin Stalvey, head of the Department of Labor's Office of Federal Contract Compliance in Philadelphia, "but there is no doubt the contractors are behind in compliance."

Answering complaints from a coalition of organizations that includes the Urban League, the NAACP, and the League of Women Voters, Stalvey said he would appoint a committee to monitor the projects in the city that are being supported by HUD, DOT and HEW, and perhaps ask those agencies to "get after the contractors."

"The contractors should have no problem recruiting," he added, "because we know the number of minority workers available and we can aid them with recruitment. . . . We haven't heard any contractors say that they couldn't find workers."

CAMBODIA ON CAMPUS

Following the President's surprise move on Cambodia, there were other angry voices heard in architecture, planning, and related professions. Resistance came initially from university campuses. But others soon followed their lead:

- The board of directors of the

Associated Student Chapters of the AIA unanimously passed a resolution sent to President Nixon over the signature of its president, Michael A. Interbartolo Jr. It called for the "complete and immediate extrication of American personnel from the conflict in Southeast Asia."

● Following a break with the Administration by 12 Harvard foreign policy experts who had served as advisors to four presidents, a group of six urbanists from Harvard met with Daniel Patrick Moynihan, a former colleague and now counsellor to the President, to say they could no longer offer formal or informal advice to this Administration in protest against the "dangerous" impact of the President's action on the crisis of the cities. The six were: Charles M. Haar, associate director of the Harvard/MIT Joint Center for Urban Studies and a former assistant secretary of HUD; Robert C. Wood, former Secretary of HUD and Moynihan's successor as director of the Joint Center for Urban Studies; William A. Doebele, Harvard professor of design; Bernard J. Frieden, MIT professor of planning; Lee Rainwater, Harvard professor of sociology; and Alonzo S. Yerby, associate dean of Harvard's School of Public Health.

● About 50 architecture students from Columbia and eight of their professors joined scores of other students in Washington last month to lobby among senators for passage of the McGovern-Hatfield amendment. This "Amendment to End the War" would withdraw all troops from Southeast Asia by June, 1971.

● All across the U.S., professional groups were forming to

petition the Congress and/or the White House to put an end to the Indo-China war. Architects, planners and other designers were organizing as a committee of "Designers for Peace," and names were piling up in collecting points from New York to California. (One such point: Designers for Peace, 16 Eliot St., Cambridge, Mass., 02138.) This month, a delegation expects to go to Washington to visit key Congressmen and the White House so as to present their petition in person.

SEQUELS

CHOOSING A NON-MONUMENT

Venturi & Rauch of Philadelphia (with W. G. Clark, Jim Greifendorf, Steve Izenour, Arthur Jones, Doug Southworth) have won the Yale University competition for a mathematics building.

Said John Stratton of the Yale News Bureau: "The winning design [below] was the only one of the five semifinalists [see April issue, page 78] which met all of the program requirements down to the minutest detail."

Announced last fall (Nov. '69 issue, page 89), the competition had at least one extraordinary requirement. Often characterized as "the greatest open air museum of modern architecture on the continent," Yale called this time for "workable, economical, generally non-monumental space."

Members of the jury were more effusive in their praise than the News Bureau. "It does exactly what a math department building should," said Professor

Charles E. Rickart. As chairman of the math department and the building's client, Rickart feared it would be "all too simple and not dramatic enough" to please the others on the jury. On the contrary, said Vincent Scully, professor of art history, "the absolute unanimity of the judges was very exciting. . . . This choice could never have been made in the '50s." Characterizing that decade as "exhibitionist," he described the winning design as "so intense and so controlled in its attempt to deal with the program in its most economic terms."

And for Architect Romaldo Giurgola the Venturi & Rauch scheme was "a door opening on the future for architecture."

SCULPTURE IN REPOSE

Two of Henry Moore's mute reclining figures have had a crusading advocate in Howard Baer, who had paid \$50,000 for them and then had given them to the City of St. Louis. He was somewhat speechless himself at the indignities they had been submitted to a year ago when the



city shoved them, backside out, up tight against the glass facades of the vaulted Lambert airport terminal (Apr. '69 issue, page 23). The languid, contemplative figures were positioned where they could not be readily seen by travelers rushing to catch a plane and, worse yet, could not be circumambulated.

Now, a decade after Baer gave them to the city, the Moores at last seem content (above), contemplating the magnolias in the city's botanical gardens.

HIGHRISE PUT-DOWN

The corner collapse of the Ronan Point apartment tower's system-built flats in London (July/Aug. '68 issue, page 39) resulted in four deaths, but shock waves continue to reverberate. The Ministry of Housing has recommended that all housing authori-

ties cut off gas supplies to systems-built multistory blocks of flats and that the structures be strengthened whenever possible. These safeguards will probably cost £25 million.

More profoundly, the tragedy has led to a rethinking by the Greater London Council of the virtues of highrise living.

Widespread evidence of a lack of confidence in systems-built flats came from London tenants—never very enamored of the skyscraper in their midst.

At a recent exhibition showing how London's housing problem would be approached in the '70s, GLC official Desmond Plummer said: "There will in future probably be no very tall towers of 20 or more stories. Although we may not regret the loss of such tall buildings, we do need medium height blocks, say 12 to 14 stories, if we are not to go to the other extreme and cover the ground with high density lowrise housing." Most projects on display demonstrated this departure from the typical high-blocks-mixed-with-low planning of the past. "Even before Ronan Point the tide was running against tall blocks," said Plummer.

ENVIRONMENT

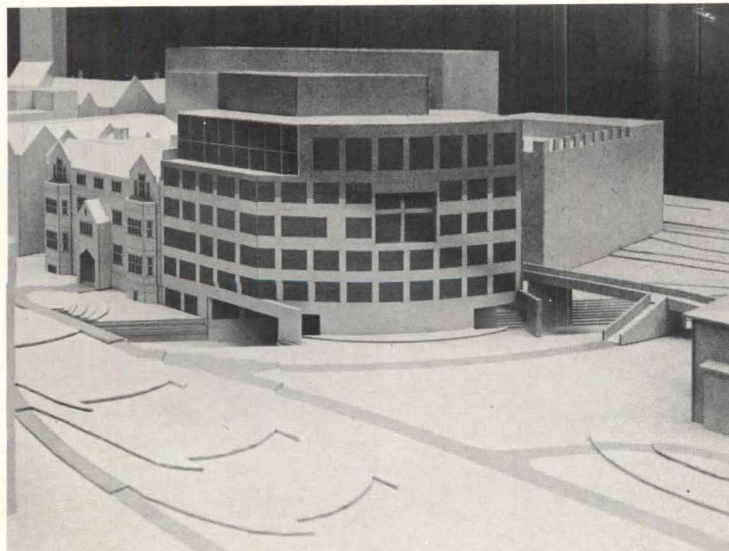
ECONOMY AND ECOLOGY

The oil field at Prudhoe Bay on Alaska's Arctic North Slope is, to its consortium of lessees, a potential profit of \$60 billion. The trans-Alaska pipeline they propose to build, to get the oil from the north to the all-weather port of Valdez in the south has been called "the largest private enterprise project in the history of man."

Alaskans view the pipeline in terms of economy; without it, they foresee disaster. Conservationists view it in terms of ecology; with it, they foresee disaster. In the middle, stands Walter Hickel, the former governor of Alaska and now Secretary of the Interior, his loyalties claimed by both sides. At stake is the largest unspoiled wilderness in the country.

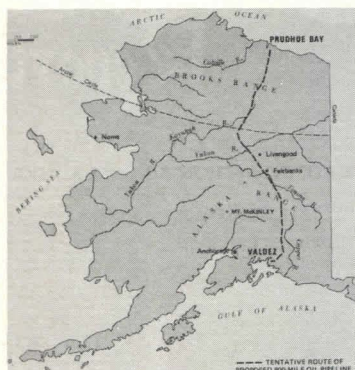
On Earth Day, Hickel pledged that he would issue the required pipeline permit, while emphasizing that perhaps a year would go by before the oil companies could present a plan that his department could approve.

The consortium's original



scheme was to bury the pipe in the permafrost—a frozen layer of gravel, sand and ice covering 85 per cent of the route. Even the consortium's engineers agree that there is a 50-50 chance that the oil, piped through at temperatures up to 180°F., would melt the permafrost, thus causing breaks in the line. Said William T. Pecora, director of the Geological Survey: "Hell, I wouldn't put up anything under those circumstances."

One alternative is to put up to 50 per cent of the pipeline above ground on stilts. This would still not resolve one possible danger and would present another. The line will cross the



Denali and Fairweather earthquake faults—an obvious danger above or below ground. But no one knows what an elevated line might do to the migration patterns of caribou and other wild animals. And, say the oilmen, it would be vulnerable to accidental damage and to sabotage.

On the scene are 250 miles of Japanese-made pipe stacked high, and \$42-million worth of heavy equipment warehoused, ready to go.

While the project is in abeyance, both sides have a new opportunity to be heard—and to listen. Perhaps the now unenviable position of Secretary Hickel—somewhere in the middle—is the right one after all.

FOLLIES

ENIGMA AT XILITLA

"La Casa del Ingles" (top right) is on a dirt road somewhere off the road to Xilitla, which is somewhere off the old Pan-American Highway, northeast of Mexico City, in the state of San Luis Potosi. We tell you where it is at such lengths because that is all we know. Perhaps our readers can help.

Photographer George Cserna



(this year's AIA Medal winner) put us onto "the house of the Englishman," but not even the Xilitlans know who the Englishman was. Or who were his architects (we assume there were a succession of them). Or why his casa is all porticos; why the concrete sculptural fantasy at the top, which resembles a tongue lapping at an ice cream cone, has exterior stairs that lead nowhere. Or, indeed, why La Casa was abandoned.

Our own fantasy is that the Englishman had a blinding revelation on those stairs one night and returned to England, where eccentrics are appreciated.

BOOMS

POP GOES THE WORLD!

People will live in highrise buildings covering every square inch of the earth, including oceans and ice caps, and will survive on a diet of algae grown on rooftops. All other creatures will be dead. We can look for this in 460 years even if present birth and death rates remain unchanged, says Dr. Isaac Asimov, chemist and popular science-fiction author.

The national student planning committee of the Association of Student Chapters of the AIA are enlisting support for a convention resolution in Boston this month that would put architects on record, individually and cor-

porately, for zero population growth in this country. The students believe that a convention resolution of last year—which asserted that the skills to produce an efficient, humane, harmonious and prosperous society are well within the nation's grasp—is not only unrealistic but approaches the problem from the wrong end.

Translating Bureau of Census estimated growth figures into architectural terms, we would be required to build the equivalent of a city of more than 450,000 persons every month from now until the year 2000. Fewer than 30 U.S. cities have exceeded that number since the country was colonized.

The National Committee on Urban Growth Policy has urged the establishment of 100 new towns averaging 100,000 population plus ten cities of one million. "That adds up to 20 million persons," says the ASC committee's position paper, "or 12½ per cent of the predicted increase."

The students recommend the AIA publicly endorse: all methods of voluntary birth control including legalized abortion; tax incentives for single persons, families with fewer than three children (except by adoption), and couples who postpone marriage until they are 26; critical commentary on media presentations that glorify early marriage and large families or degrade bachelorhood or spinsterhood;

(continued on page 70)



BOSTON'S OPEN CENTER

The new Boston City Hall has been attracting worldwide attention ever since its competition-winning design was announced back in 1963. But City Hall, recently completed (Jan./Feb. '69 issue), is only one part of Government Center, a 60-acre, \$275-million effort to draw people and investment back to the historic core of Boston.

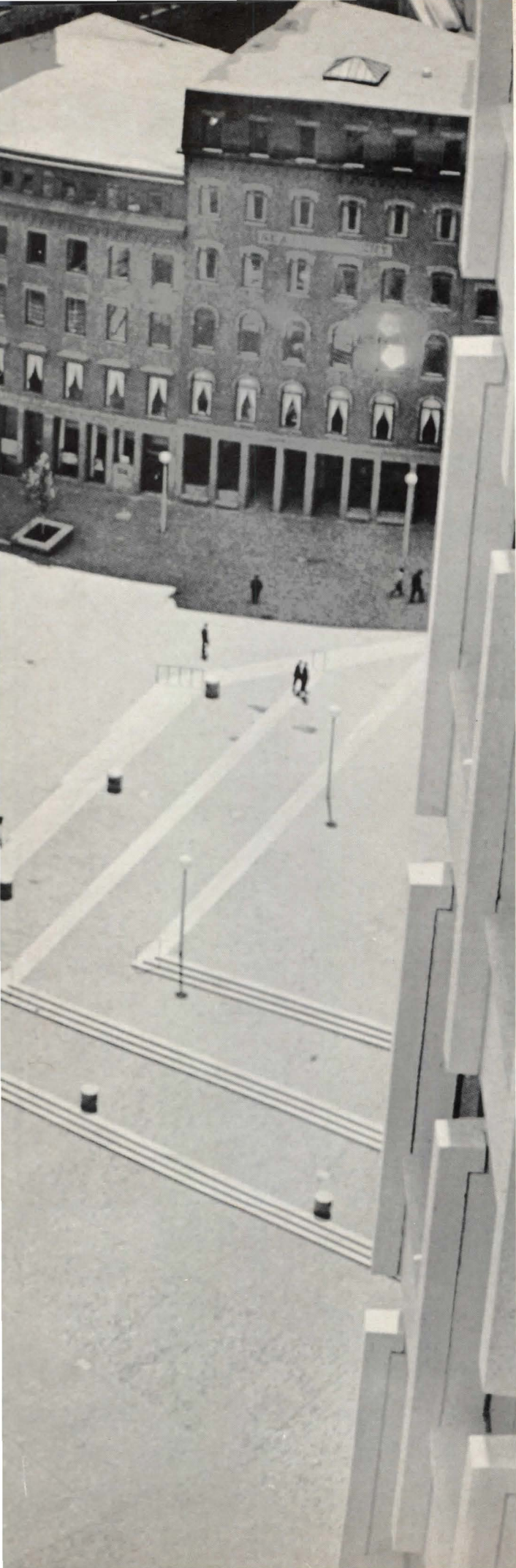
In many ways the key parts of Government Center are not its buildings, but its open spaces—almost all of them designed by Kallmann & McKinnell (who designed City Hall itself, with Architect Edward F. Knowles). The biggest open space, City Hall Plaza (left), is the hub of a much larger network of smaller malls and squares—none quite complete yet—extending through the entire renewal area and beyond into other parts of Boston.

There has never been anything else in the U.S. like Government Center's 16 acres of interconnected, brick-paved spaces. All of the favorite urban design ideas of the '50s and '60s are here—the sequence and climax of Ian Nairn's "townscape," the nodes and paths of Kevin Lynch's "imageable city." And all of the traditional components—stairs, fountains, and arcades—have been included.

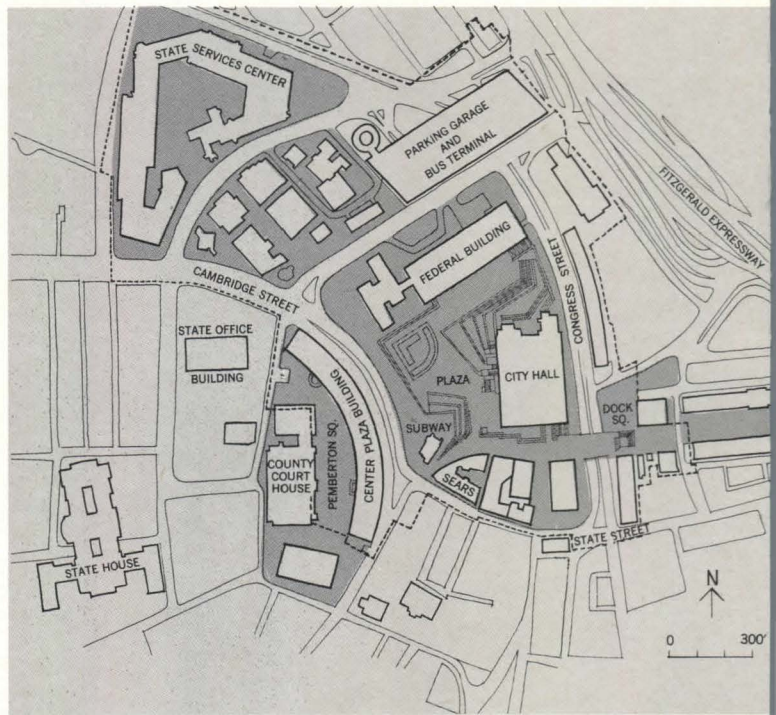
The attraction of these spaces as gathering places—and their effectiveness as circulation routes—will be the real test of Government Center. And their success will determine, to some extent, the future of the large-scale plaza in U.S. cities.

The whole complex of spaces originated in a master plan drawn up in 1961 by I. M. Pei & Associates, which set strict limits on the positions and forms of all structures and spaces. As the center has taken shape, the Boston Redevelopment Authority—working with eminent architects on its Design Advisory Commission—has made many adjustments in the plan.

BRA's ability to guide the plan through nine years of evolution—with a changing cast of officials and developers—is due in part to its statutory powers, in part to its strong design staff—and in large part to BRA's planning and design administrator, Charles Hilgenhurst, who has sustained the enthusiasm that former BRA chief Ed Logue and former mayor John F. Collins brought to Government Center at its outset.



A view down into City Hall Plaza, designed by Kallmann & McKinnell, shows a portion of its ten acres of brick paving and some of the diverse buildings, at odd angles and elevations, that had to be reconciled in its geometry and levels. At far left is City Hall itself, (also designed by Kallmann & McKinnell, with Edward F. Knowles). Construction will start later this year on the unfinished portion just to the right of City Hall, where the plaza covers a service drive. At near left is part of the John F. Kennedy Federal Building, designed by TAC, from which the photo was taken.





The spaces were shaped for circulation



The buildings that shape City Hall Plaza (clockwise, from top left). The opposing curves of the Sears Crescent (1841, anonymous) and the Center Plaza Building (1965-1970, Welton Beckett) form a trumpet-shaped opening from Tremont Street. The gap between the Federal Building and City Hall will be partially filled by a hotel at the northeast corner of the center, its massing carefully restudied to preserve a long view of the Old North Church steeple. City Hall and Sears Crescent frame a view of Faneuil Hall, a view that may be enjoyed from outdoor tables if the restaurant occupying three floors of Sears can be persuaded to expand outward. A shop-lined arcade runs along the east front of the Center Plaza Building. A two-story portal leads through that building. The uphill end of this passage is in partially completed Pemberton Square—also designed by Kallmann & McKinnell—which forms a link between City Hall Plaza and the state and county buildings on Beacon Hill.

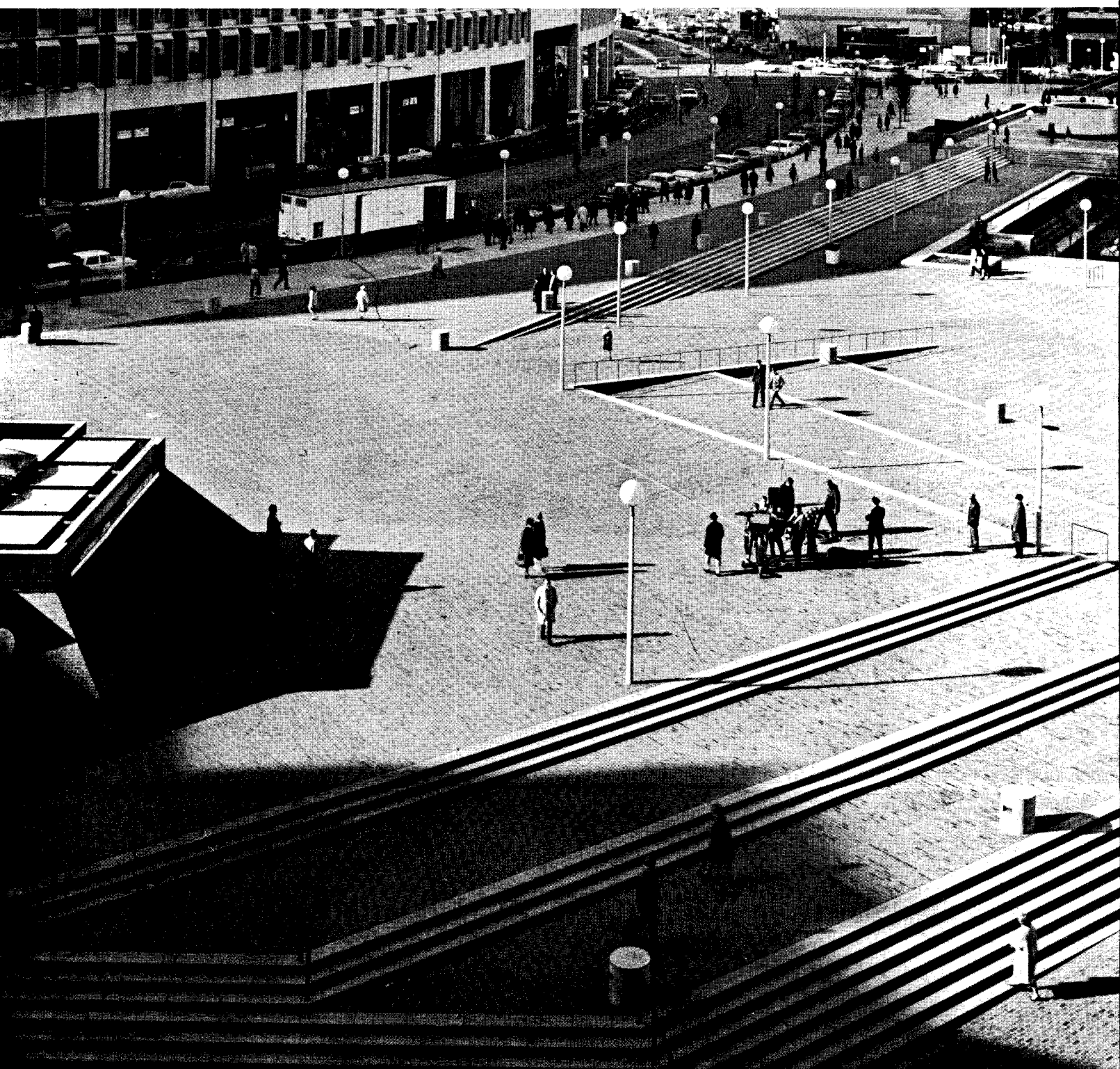
Government Center's open spaces are as irregular as the street pattern of Downtown Boston, from which they were carved. The renewal project has consolidated 26 old city blocks into four, but pedestrians still cross the remaining streets at grade level.

There will be only one pedestrian overpass (to be started later this year) running from City Hall to Dock Square. And that one has been narrowed from the 350-ft.-wide raised plaza proposed by Pei to a still ample 50-ft.-wide bridge. A second span across the Congress Street artery might be useful, but other overpasses would do little more than clutter the view. Traditionally, pedestrians in Downtown Boston have intimidated drivers, and this reversal of roles still persists.

Very few old buildings on the Government Center site were saved; 1961 was the heyday of bulldozer renewal, and Boston was overburdened with old buildings. But Pei insisted on saving the architecturally commonplace Sears Crescent (top photo, opposite) because he foresaw that its facade, then facing a narrow street, would make a fine south wall for the big plaza—and that a plaza with no old buildings on it would seem alienated from the city.

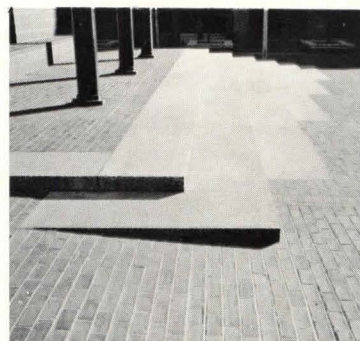
The 900-ft.-long Center Plaza Building, called a "horizontal skyscraper" by its owners, was shaped almost entirely by urban design objectives. Its form, including the portals through it, was specified in Pei's plan. And its small-scaled walls of brick and precast concrete are the result of long negotiations between Architects Welton Beckett & Associates and BRA advisors.

City Hall Plaza is inevitably compared to the Piazza del Campo at Siena, mainly because of that well-known radial pattern of brick paving. And the size of the "hard" area in front of City Hall is so close to that of the Siena space that the architects showed comparative plans to win over skeptics. But the differences between the two spaces are revealing. The Siena plaza is closed in by a continuous concave wall, and its paving pitches toward a central point. The walls around City Hall Plaza bulge *inward*, following the flow of major streets, and its floor slopes off to one side, sweeping around City Hall.





Ten acres of brick and granite "terrain"



Between the foot of the plaza's paved hillside (top left) and its summit (far left), there are many variations on the brick and granite theme: standard steps peel off at an angle to form broad treads (top left); wedge-shaped terraces (top middle) bend around to form landings on a pyramidal stair (top right). Where pitched paving meets stair treads, the two materials merge neatly (detail above). Concrete "bollards" contain lights to illuminate the steps at night. The lollipop lamp posts (the architects preferred "common" fixtures that worked to "fancy" ones that didn't) will soon be modified to support pairs of globes. For every change of level in the whole plaza, there are alternate routes using ramps instead of steps.

The whole of City Hall Plaza is a paved hillside, which rises from the northeast corner of City Hall (top left)—a point that was once on the shore of Boston Harbor—and twists upward to the subway kiosk at Tremont Street (far left). For all the picturesqueness of this man-made terrain, there is hardly an arbitrary line in it.

The plaza pavement had to meet existing grade levels along bounding streets and at buildings to be retained; it also had to meet the flat podium on which the Federal Building stands, which was fixed before plaza design started. And there is a network of subway tunnels below, one of which comes within a foot of the surface.

The one place where the contour of the plaza is arbitrary is at the sunken fountain, and its formal geometry expresses this fact. The location of the fountain is not so arbitrary: it is at one of the few locations where excavating was possible, and at a point where its jets can be seen from either way on the arch-shaped street to the west. The quarter-circle plan is an attempt to reconcile the lines of the street and the Federal Building with the layout of the plaza, but the curve merely slices off the paving pattern without really completing it.

The details of the plaza had to be excellent—and they are. The paving—of very hard, low-absorption brick set in a special mortar with latex additive—has gone through three winters (in some portions) with no sign of deterioration, even though the pitch at some points is barely adequate for drainage. The steps—of light, pinkish-gray granite—contrast strongly with the brick for the sake of safety; grooves near the edge of the treads—designed to catch dirt—help to define each step.

The volume of foot traffic crossing the plaza—one of the justifications for its existence—is still only a fraction of what it will become. When the bus terminal-parking garage at the northeast corner of the center is completed, and the hotel adjoining it goes up, the plaza will be their principal link to the rest of Downtown. The full capacity of the plaza for gatherings has already been used—not for a political protest, but for a victory celebration honoring Boston's beloved hockey team.

The Government Center plazas are not all brick paving and steps. There are many different places to sit, but they are concentrated in well-defined areas—where there are natural eddies in the circulation pattern and where views are good. The fountain area alone offers a variety of seating—along the top rim, commanding a view of the whole plaza; in the more protected alcoves at the top of the stairs; or on benches down inside, away from the sound and sight of traffic.

The fountain is Boston's answer to the Fontana di Trevi, at the same tremendous scale. But it has no sculpture, and that was no oversight; there is sculpture elsewhere in Government Center, and there will be more, but the architects and the BRA deliberately fashioned this centerpiece out of one noncontroversial material—water—with no personal embellishments. They did, however, add trees, which will help keep this sun-pocket cool in summer. But visually, the trees just screen the fountains from view with their own competing patterns.

In the other open spaces of Government Center, extending out from the main plaza, there are—or will be—many more places to sit and many more trees. Having seen all this bare paving—and liked it—the architects are not about to spoil it by excess repetition. Each of the smaller spaces will have its own flavor: Pemberton Square will be enclosed and sedate; busy Dock Square will accommodate plant vendors now located there.

Back in the early '60s, when construction was just beginning, a FORUM article on Government Center (June '64 issue) spoke of fears that it might turn out to be "a lifeless, though handsome, place." Tenants for the private office buildings in the development plan had not been found, and there was speculation that Prudential Center and other competing projects might "glut the market." Their effect, instead, was to spur growth of a new market by setting higher standards for office space. Now Government Center's office sites are filled, and two major office towers are going up along its south edge. They seem to bear out Logue's confident 1964 prediction about the center: "We have the place where people like to walk."—JOHN MORRIS DIXON

City Hall Plaza has lots of places to sit

Places to sit in City Hall Plaza (top, left to right). The terrace alongside the Federal Building will be shady, eventually, but its benches are too spartan. The subway kiosk, which went up in 1963 as a lone sample of things to come, still seats a crowd of people, in two informal rows. The unique, walk-in fountain has back-to-back benches with low central ledges that are handy shelves for lunches, books, or just elbows. The fountains are designed to vary in volume—up to 18,000 gallons per minute; they also adjust to wind, but gusts may be too quick for the sensing devices.

FACTS AND FIGURES

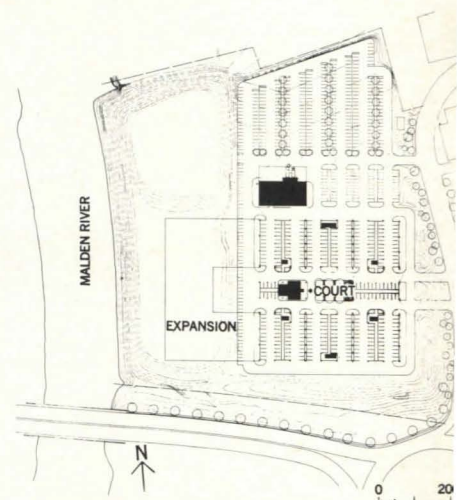
Government Center Redevelopment Area plazas. Client: Boston Redevelopment Authority (acting for the city). Architects: Kallmann & McKinnell (with Campbell & Aldrich and Lemesurier Associates for City Hall Plaza). Areas: City Hall Plaza, 417,000 sq. ft. (completed), 41,000 sq. ft. (future); other spaces, 112,000 sq. ft. (completed), 120,000 sq. ft. (future). Cost: \$6,150,821 (to date), \$2,158,000 (future, estimated). PHOTOGRAPHS: Phokion Karas (page 24; page 26, top and bottom; page 27, bottom; page 28, top left and bottom; page 30, top); others, John Morris Dixon.



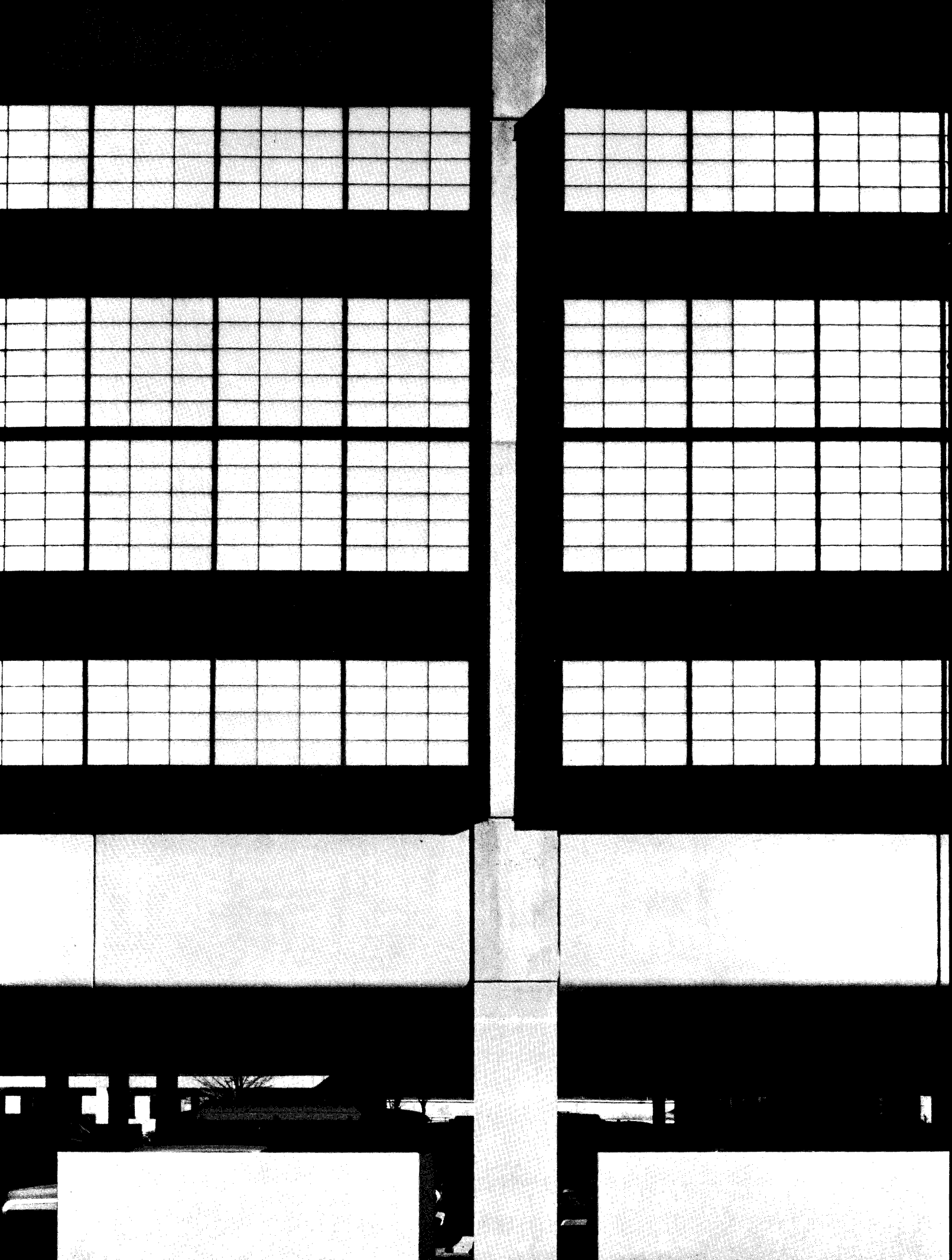




PALACE ON A STRIP



Rising above polluted marshes near Boston are the orderly walls of the Avco Research Labs, designed by Architects Peirce & Pierce. Plainly expressed firewalls divide the 384-ft.-square structure into eight square blocks, each topped by a cube-like penthouse; the eight surround an open central court. Five similar blocks can be added to the west, enclosing another court. Raising the two working floors on pilotis made room under them for most of the required parking area. A continuous mound between the road and the building, on which tall grass is to grow, screens cars from view and keeps the labs from looking spindly.



Standing on a former city dump in the northern suburbs of Boston, opposite a boldly identified peanut butter warehouse, is the serene expanse of the Avco Research Labs, designed by Architects Peirce & Pierce.

Avco's research activities had previously been scattered among several buildings in the area. When management decided to concentrate them in one new structure, they chose a site in the same vicinity—convenient to the airport and other key metropolitan facilities—even though it posed a number of problems.

The area is built up enough to make land scarce and expensive, compared to outlying sites, yet there is virtually no public transportation, so all employees come to work by car. This 22-acre site had to accommodate 250,000 sq. ft. of lab and office space, expandable to 400,000 sq. ft., plus parking for 500 cars, initially (1,800 eventually).

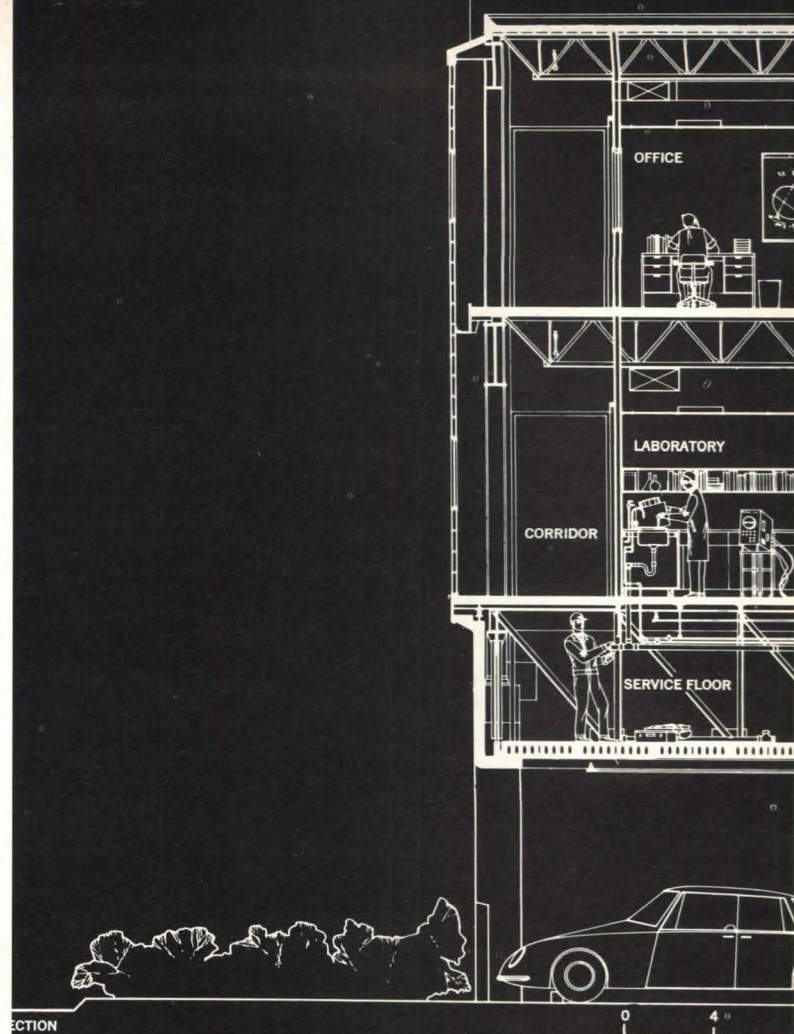
The architects' solution was to raise the building off the ground, leaving parking space for more than 300 cars beneath it. Since the building would have required special footings to support it on the landfill in any case, the cost of raising it on pilotis was small—smaller than the cost of separate parking structures or additional land. And there was a big dividend: covered employee parking with weather-protected access.

The relatively large structural bays (42 ft. by 21 ft.) required to permit an efficient parking layout could be spanned more economically with steel trusses than with beams. The architects took advantage of the truss depth to provide a service floor beneath the entire laboratory floor (section, right), which allows all laboratory services to be rearranged freely.

Peripheral corridors on the laboratory and office floors serve as climatic buffer zones—with no rigid temperature requirements of their own—which make heating and air-conditioning of the work areas more economical and easier to control.

The translucent exterior walls, with continuous strips of glass at eye level, are composed of sandwich panels of glass fiber insulation between two layers of reinforced plastic, all bonded to a black aluminum grid. Prefabricated in sections 5 ft. wide and two stories high, walls can be moved for building expansion.

The lightness of the translucent curtain wall (left) has been emphasized by projecting it beyond the concrete piers. Precast concrete panels enclosing the utility floor (section right) have been lightly sandblasted to differentiate them from the untreated concrete piers. Round, tube-formed columns used in the parking area under the building present the least possible obstruction of drivers' vision and the least threat to fenders. Corridors along the exterior (photo right) have not been finished like the interior, but more like enclosed balconies, with their steel framing exposed. Signs at fire doors identify the eight blocks of the building by compass direction.



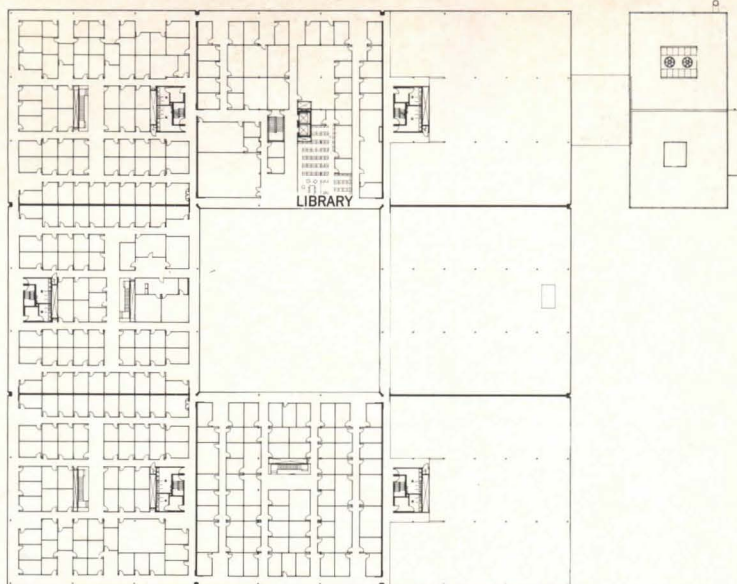
The Avco Research Labs are divided into 128-ft.-square blocks by fire walls, which are spaced as far apart as local codes allow to make floor layout as flexible as possible. Fixed elements—fire stairs, toilets, and main mechanical risers—are clustered together. Open stair wells—with colorful wall graphics—at the center of most blocks encourage contact between the labs and related offices above them.

The compact arrangement of these blocks on the site yielded a low ratio of perimeter to floor area, so that relatively few employees could have had outside offices. Following the precedent set by Eero Saarinen in the IBM Yorktown Heights labs (June '61 issue) and the Bell Labs. (April '67 issue), Peirce & Pierce made all offices interior ones and put all windows in the corridors, where everyone can enjoy them.

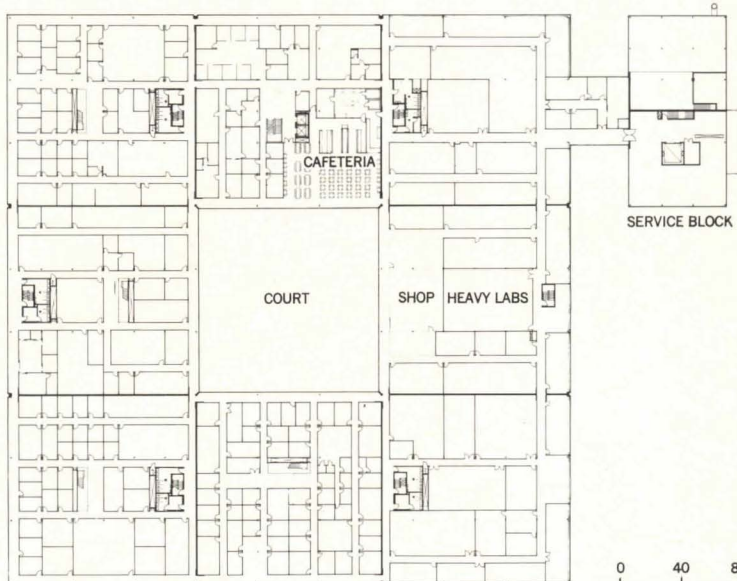
By arranging the eight blocks around an open central court, they limited the distance to the outside wall from any point in the building to 64 ft.—and also kept the parking area below it from becoming an impenetrable cavern. The administrative block, elevators, and the semi-detached service block, which are now off to one side, will be in the center of the complex when it is expanded by adding five more blocks to the west (around a second court).

The central court provides both the main entrance to the building and the most attractive outlook from it. The landscaping is unpretentious and appropriate. The several large trees are a welcome sight in this area of industrial blight; the layout of brick paving and planting beds is irregular, in contrast to the building, but there are no pronounced curved lines to set up a visual conflict.

The remarkable orderliness of the entire building reflects a thoroughly rational approach to its construction. One architect who watched it going up reports: "The construction process was just as clean as the finished building; you could see the frame alone, then the mechanical system added, and finally the skin going over it all." The bold distinction between the supporting frame and the applied elements is still quite visible; and that is what keeps this meticulously detailed structure from looking incongruously sleek in its drab surroundings.



OFFICE FLOOR



LAB FLOOR

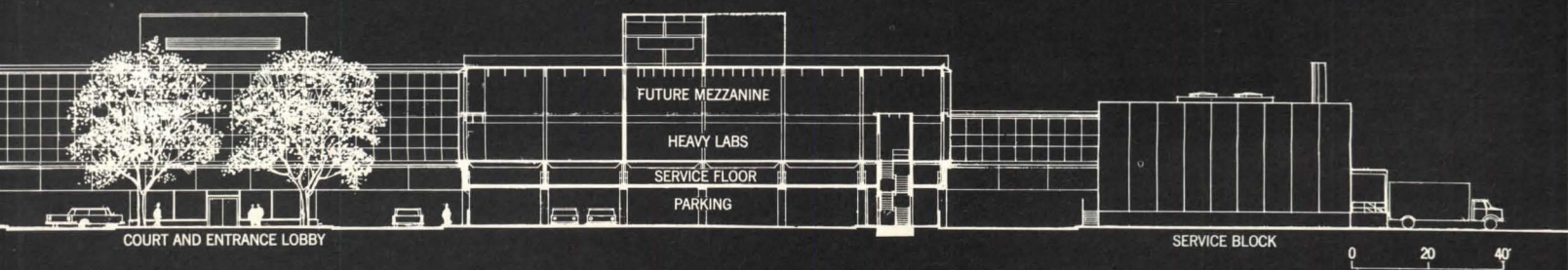
FACTS AND FIGURES

Avco Everett Research Laboratory, Everett, Mass. Architects: Peirce & Pierce (Walter S. Pierce, partner-in-charge; George Nielsen, job captain). Engineers: Souza & True (structural); Francis Associates (mechanical and electrical). Landscape architects: Mason & Frey. Consultants: Haley & Aldrich (foundations); Bolt, Beranek & Newman (acoustics); William M. C. Lam (lighting). General contractor: Turner Construction Co. Building area: 250,000 sq. ft. Cost (including site work and fees): \$7,000,000. PHOTOGRAPHS: Phokion Karas.

Within each of the 128-ft.-square blocks that make up the building (plans above), offices and labs are laid out along feeder corridors leading toward the main exterior ones, so that each employee can see outdoors from the door of his own space. Floor-to-ceiling glass around three sides of the central court (right) offers the widest possible view of its greenery from surrounding corridors, library, and cafeteria. In views outward from the court, the grass-covered mounds around the building block out the sight (and much of the sound) of highways and factories outside.



SECTION



New towns are our mandate for urban innovations

BY SUMNER MYERS
AND ROBERT SCHWARTZ

New towns are the new American Dream. Their image is of fresh air, green grass, prosperous parents and rosy-cheeked children. They are the hopeful alternatives to the deterioration, overcrowding and other failures of existing urban areas and an invitation to a new and better way of life.

That is the dream.

Here is the reality.

New towns are usually a sugar-coated version of the cities that preceded them and offer no real alternative at all.

The problem lies in the motivations for building new towns. The private developer builds them to make money. The government supports his efforts (more rarely his bankroll) because it sees new towns as a way to siphon off urban congestion and redistribute the population. The National Commission on Population Growth has recommended construction of 110 new towns, housing 20 million people, to help accommodate the 100 million new U.S. citizens predicted for the year 2000.

What is missing is the realization by government and private developers that new towns are a unique opportunity for full-scale testing of innovations for a new kind of urban life. Without this opportunity, many new urban systems may *never* be tried.

These ideas are not entirely new. William Alonso, of the University of California at Berkeley, has written a widely circulated paper that concludes that introducing urban innovations that could be applied to solving the problems of existing cities may be the *only* justification for building new towns. He systematically refutes every other defense.

We are going to illustrate this thesis by outlining some specific examples of systems that can and should be tested in a new town. The systems are already technologically feasible; they could benefit established cities when they are fully proven out (Drawing 1), and they are unlikely to be implemented on a large scale by any other route than a new town.

Adapted from a slide presentation. Mr. Myers is Director of Techno-Urban Studies for the Institute of Public Administration. Mr. Schwartz is a partner of the environmental design firm of October. Research for this article was supported by the Organization for Economic Cooperation and Development (OECD).

Transportation schemes are the most complex type of urban system to introduce. Unlike new concepts of housing and site planning, which ironically are being tested in some new towns, transportation systems need a city of perhaps 70,000 people as a testing ground. Two examples of transportation systems ready for such demonstration are the horizontal elevator and minielectric car.

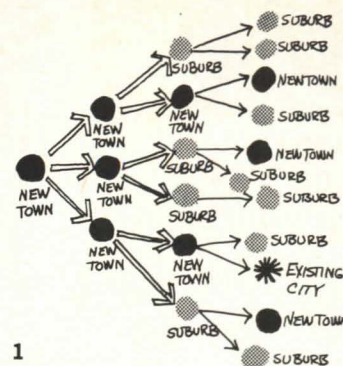
The horizontal elevator is an automated train of small cars that can couple and uncouple themselves. Prototypes are available and include the Dashaveyor system, minirail, and the Westinghouse Skybus. The minielectric car is a familiar sight on golf courses, but rarely used as a street vehicle, primarily because it is incompatible with high-speed automobiles and requires its own road network.

Imposing either the horizontal elevator or the minielectric car system on an existing city for experimental use would be political suicide and fiscal irresponsibility. There would be long disruptions in normal city activities and services. If anything went wrong the failures would be highly visible—especially when the mayor came up for reelection.

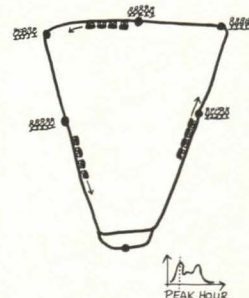
The mechanics of the systems would be less of a problem than the land use planning they may require. In a new town the new road and rail networks could be laid out as the rest of the town's development is planned.

New town planning implies an integrated planning approach. Furthermore, early considerations of innovative concepts in transportation can generate innovative land use plans. If the interaction is delayed, the innovation and its potential as a stimulus will be lost because of earlier planning commitments. For example, when the new town of Columbia, Md., was being planned, the developers called for studies of new transportation schemes that might be introduced there. But the call came too late. Villages had already been planned and any different concept of transportation would already have caused too many costly disruptions to justify the trial.

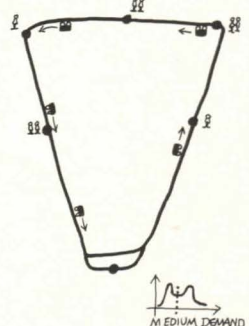
Other alternatives to new towns are fairs and amusement parks. But people go to fairs to be amused, not educated. Exhibits are viewed as large-scale



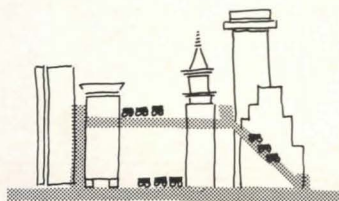
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models or expensive toys—not serious possibilities.

New towns have the advantages of both cities and fairs. They are built from scratch; they are generally under single management; and they are large in scale. Unlike fairs, they are built as places for people to live and work, so it requires little imagination to transfer their technology to other living/working situations. Unlike older cities, new towns have few vested political or proprietary interests to oppose innovation. And the innovations will not mean ripping out streets, homes or disrupting services.

The structure of the Federal Government may be the biggest obstacle to innovating in new towns. We will come back to this problem, but first we want to describe more precisely what innovations (such as the horizontal elevator and the minielectric car) promise and can demonstrate if they are introduced in a new town.

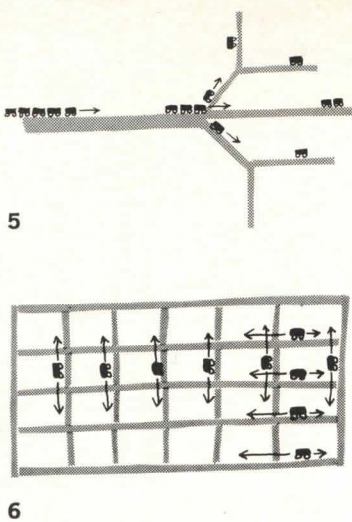
The horizontal elevator

Major metropolitan areas all share the problem of gearing mass transportation systems to meet peak demand periods, yet run economically at low demand times. The horizontal elevator is potentially an efficient and economical solution.

At peak periods, the elevator cars would be connected automatically to form long trains (Drawing 2) that could run on frequent schedules to handle large passenger loads. When rush hour started to slow, the trains could automatically disconnect some cars. At slow times of the day, each train might have only one car (Drawing 3). The same frequency schedule would be maintained at all times, however, and a passenger would have to wait no longer for a train at 2 a.m. than he would at rush hour.

There are many alternative forms that the horizontal elevator can take. For example, small cars can run above ground on lightweight structures, similar to the minirail at Expo 67. The Dashaveyor system, which was designed to carry ore, can negotiate steep grades. A combination could give a city a three-dimensional (Drawing 4) transportation system.

A more conservative version of the horizontal elevator system would bring people from park-



ing lots on the fringes of the city into the downtown area.

Other uses include a branching system (Drawing 5), where cars of a longer train could take passengers close to home without a transfer. Or, the system could be used as an element in an uncoupled grid system (Drawing 6), such as has been proposed for Pittsburgh.

If this system has to wait for a city like Pittsburgh to take the risks of developing it, it will stay on the drawing boards for a long time. A new town is the only apparent solution to implementing the system experimentally. It alone could provide the 1-mi.-sq. residential area that the system needs as a staging area. It alone could demonstrate controversial designs, such as elevated structures, without having the project permanently delayed by outraged citizens protesting the spectre of another Third Avenue El, which depressed New York City's East Side for many years. Finally, only a new town could introduce an automated system without fighting an entrenched motormen's or other union.

The minielectric car

There has long been a public need for a small, personal, inexpensive vehicle that can be operated safely by almost everyone. Today there is new emphasis that the vehicle be quiet and not contribute to air pollution.

Small, low-speed, battery-powered, all-weather minicars would meet all the criteria. They offer door-to-door convenience, yet take up half the space of conventional automobiles — urban parking lots could hold twice as many vehicles as now.

Conventional cars have virtually strangled public transportation systems and practically immobilized the old, the handicapped, and the young, who must be chauffeured. More than one out of three persons cannot drive a conventional car, yet many of these nondrivers could operate a minielectric car.

Like the horizontal elevator system, minicars can be developed in a variety of ways—and the technology is available. The alternative developments follow.

Current models of minielectric cars are low performance vehicles, but these could be improved and used on automated highways. Some simple control systems are already feasible.

The minielectrics could contain an automatic steering system by which the car automatically follows a wire buried in the road by sensing the flux of the AC current. A warehouse system, called Rotobug by its manufacturer, works this way.

Automated or not, minielectrics can easily be accommodated to existing cities. They are small enough to run on unobtrusive overhead structures; they are quiet enough to run beside and through buildings.

However, until there are sufficient numbers to justify separate paths, the minielectrics will remain toys, not transportation. It is a vicious circle because, until there are large numbers of minielectrics, there will not be ubiquitous path systems. New towns are therefore the logical place to break the vicious circle, assuming that the town is large enough that residents will do most of their driving within it.

The British new town Harlow is a good example of scale. It has 70,000 residents and covers about 9 sq. mi. The average trip length is only about two miles and the town was built with bicycle paths for the short trips. But British planners failed to account for the popularity of cars and now only 12 per cent of trips are by bicycle.

The minielectric would be an ideal compromise in a town like this and, on a two-mile trip, would take only four minutes longer than a conventional car.

It would also work in the U.S., where country work trips average seven miles and 38 per cent of these are less than three miles. Non-work trips average only three miles.

Most autolovers, however, would rather fight than switch, so strong incentives are obviously necessary. One such incentive is the economy of the minielectric.

If a minielectric were driven 4,000 miles a year, it would cost less than 6¢ a mile, compared to a conventional automobile that costs 12¢ per mile for 10,000 miles per year. A town could encourage their use by leasing them at 6¢ per mile or arrange financing that would reflect their long life potential. An all-weather minielectric could be designed to last 20 years and cost only \$1,200 to purchase, according to the Westinghouse Electric Co. So why not long-term mortgage financing? Interest and depreciation on a mini-

electric would add only about \$9 per month to monthly mortgage payments.

Many super-safety systems can be added to the basic vehicle design. These include a dead-man's switch in case an oldster has a heart attack while driving. The safety system could extend to the roadway itself. The AC cable, for example, could be regulated to allow the vehicle to go 12 mph when it is on the roadway; but the vehicle, without the cable, could go only 3 mph, about walking speed (Drawing 7).

To prevent intersection collisions (one-third of all two-car collisions), the roadway could contain photocells to spot the vehicle closest to the crossing and shut the power off in the intersection AC guide cable, so that the other vehicle would be slowed to 3 mph (Drawing 8). Similar systems could help prevent rear-end collisions. Also, minielectric paths could safely intersect regular streets by a variant of the photocell control system, combined with a rumble pavement to alert the driver of the conventional vehicle (Drawing 9). Regular and minicars could even share the same paths safely if, for example, the larger car was half on and half off a rumble pavement that would slow it (Drawing 10).

New patterns of land use

Perhaps the most exciting potential in new transportation systems, such as the minielectric and the horizontal elevator, is the way they may generate new patterns of land use and living.

The conventional pattern is a central business district surrounded by lower density housing. There are many alternatives to this concept and its variants (multiple village centers, etc.), but for the sake of argument, we're going to describe two planning concepts that are compatible with the minielectric and horizontal elevator systems.

A feasible alternative to the central business district concept is to locate commercial and social activities in a loop pattern slightly inside the town limits, allowing access and development on either side of the loop. Transportation for this city plan could be by minielectric cars inside the loop, where most of the town residents will live. Access from the outside could either be by minicar or conventional auto-

mobiles, which would give non-residents entrance. Within the loop development itself (Drawing 11), the horizontal elevator could take the shopper or businessman to his appointed stops, then return them to their cars.

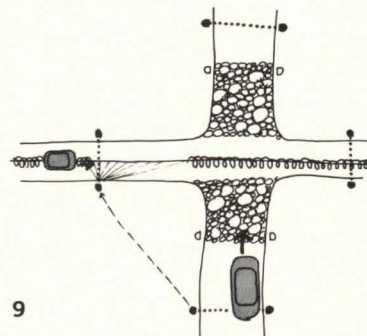
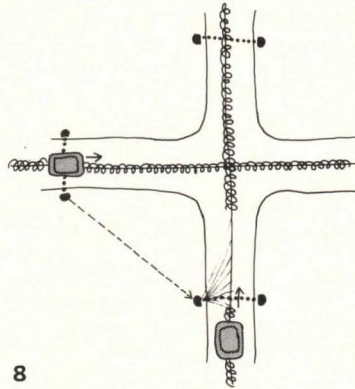
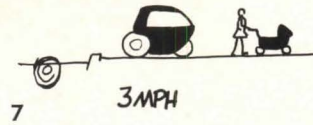
Loopville (Drawing 12) is based on typical American densities of about ten dwelling units per acre. It has the usual new town ratio of residential and nonresidential areas.

To test the scheme, we calculated the mass development averages of typical new towns. Then we drew the same mass into different patterns, including a linear city concept and the loop (Drawing 13). As an example, we rearranged the plan of Runcorn, England, with densities the same, and found the activity or commercial areas were easily redistributed into a loop that promised workable densities within the loop and easy access from without.

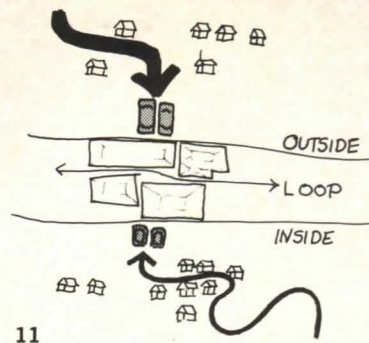
The loop concept has precedents in many places, but few have been used as an integral part of new town planning. Reston, Va., for example, is now facing problems of congestion in its central village area. What is sad is that Reston had a loop of secondary roads surrounding it before anyone even thought of putting a new town on the site. Reston is not unique: Many cities have similar looped road networks as secondary, suburban roads.

Many people will not be content with a minielectric car as their only car. The big automobile is seemingly irresistible. But the new town could be set up with centrally located rental agencies on the edge of the loop, where families could arrive in their minicars and drive out from the edge of town in a large car for the weekend.

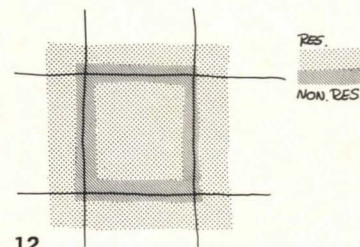
Within the loop, residents could enjoy a quiet, unpolluted (by cars, anyway) environment. Minicars could plug into the house, like the mobile lounges at Dulles Airport. The pathways could be right next to the houses since the minielectrics are quiet, meaning door-to-door services for the household (Drawing 14). The recharging system for the minielectric would be automatic—for example, a trip charging device (Drawing 15). These devices could be installed at each house and in each parking space along the loop activity belt.



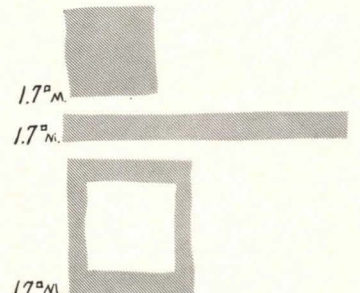
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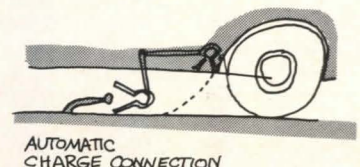
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The horizontal elevator system works well with Loopville and even improves it, but the system is equally conducive to other kinds of urban patterns.

Horizontal City

Horizontal elevators are a direct challenge to the high-rise satellite towns of Europe, for example. We visited several of these, including Sweden's Skarholmen, which consists largely of ten-story buildings for easy access to the town center.

The problem with many of these new towns is that high towers are not conducive to family living. (The U.S. has recognized this and now prohibits public housing for families in highrise buildings unless the high price of land offers no feasible alternative.)

We asked ourselves if the towns could have been more effectively planned as horizontal cities, with horizontal elevators replacing vertical systems. The notion (Drawing 16) had not occurred to the European planners we questioned. We decided to do some comparative studies to determine the economic and spatial feasibility of a horizontal city versus a vertical city of the same population and cost.

The first study, Vertical City, housed 60,000 people in ten-story towers clustered close to a central business district and served by a rapid transit stop. The town center was about one-quarter mile across, which is typical in a city of that size.

The second model, Horizontal City, also houses 60,000 and has a transit stop in the center. It requires the same overall amount of land as Vertical City, but covers $1\frac{1}{2}$ times the developed area. Construction is primarily three-story townhouses.

A system of horizontal elevator rail loops (converging like petals of a flower in outline) connect townhouse residents to the city center. Assuming the same amount of money for either vertical or horizontal transportation systems, Horizontal City could have twice as much service footage, since vertical systems cost double the per-foot-cost of horizontal ones.

A computer study proved that Horizontal City gave its residents slightly better access to the center than Vertical City could. There are tradeoffs, however.

Horizontal City requires more roads and sewers, for example,

and this costs money. However, more roads means less congestion and the lower cost of building lowrise buildings, compared to highrise, may offset the costs.

Government, as I mentioned earlier, may be the biggest obstacle to any of these transportation or relating planning concepts being implemented in a new town or, therefore, anywhere else. Without direct government support, the initial costs and risks of new transportation systems are almost prohibitive to the private developer.

Government blocks

The Federal Government is simply not structured to effectively implement innovations. In the case of new towns, for example, federal departments fear accusations that they are diverting funds and resources away from the desperate needs of deteriorating, older cities.

Actually, investing in the new town may be the only way to help the old towns. It may take time for a new town to implement, test and modify a new system or plan, but at least it can do it. An older city may not be able to do anything at all, ever. New plans could sit in bureaucrats' drawers forever.

Some of the problems are historical and based on a tradition of bureaucratic jurisdictions. Because new towns were traditionally supported as partial solutions to poor inner city housing and population redistribution, development policy originally fell under the Departments of Housing and Urban Development and the Department of Agriculture. Agriculture saw new towns largely as an alternative to rural depopulation, conglomerates of family farms. Real new town policy, therefore, soon fell to HUD.

Only recently has the Department of Transportation become involved in new town planning and there is, as yet, little effective interaction between DOT and HUD for testing and funding new transportation schemes. DOT's traditional emphasis on highways is another complication, though current Secretary John A. Volpe has emphasized the need for a national transportation policy and for a transportation trust fund, instead of the present highway version.

Some of the more aware bureaucrats, in both DOT and HUD, do realize the new town

potential for innovation, but the realization has done little more than generate talk among and between already enlightened men. One project that looked promising when it was conceived is Experimental City, in Minnesota, but transportation planning has been among its least innovative concepts.

HUD is now giving out new town development grants to private entrepreneurs under the New Communities Act of 1968. The first town selected is Jonathon, Minn., which has plans to use innovative housing, but has yet to announce any plans for transportation innovations. Soon it will be too late.

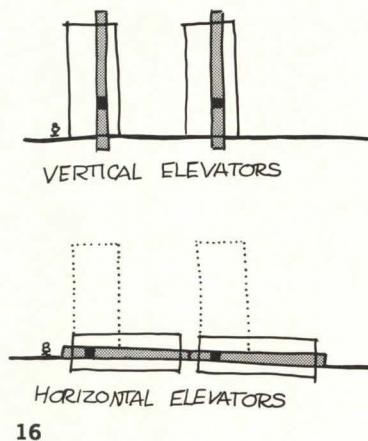
HUD's Operation Breakthrough is another scheme to subsidize innovation, but again the emphasis is housing and the scale is far below that of a new town. Nobody at HUD has yet shaped land-use policy on the ways into the boondocks and,

When urban mass transit was under HUD (before it was transferred to the newer DOT), HUD's primary concern was in saving existing transportation systems. This left few resources available for new planning concepts. Under DOT, the initial focus of urban transportation was on new technology and there was little interest in transportation planning and metropolitan development as such. DOT's traditional emphasis was on building miles of new highways into the boondocks and, while the effects on land development were obvious, there was little effort to make highways benefit land use until the Baltimore design team interfered with the city's highway plans in 1967. There were other local efforts to coordinate the planning, but little federal emphasis.

In a promising development last year, the President's Urban Affairs Council appointed a Cabinet-level subcommittee on new towns and land use, with Volpe as chairman. The group will attempt to formulate an Administration policy on new towns. Congress is also taking up legislation for new town policy and funding.

If the efforts aren't stymied by squabbles over political jurisdiction, new towns may receive at least some of the government backing they need. Hopefully, innovation will be a primary goal of the resulting new town development policy.

(Technology continued on p. 78)





A MUSEUM TURNS ONE HUNDRED

The Metropolitan Museum of Art in New York, one of the world's half-dozen truly great museum's, celebrated its 100th birthday like the *grande dame* that it is—with a gracious new plaza and entrance, a face-lifting of its Great Hall, and a \$50-million master plan to carry the old girl to the Millennium.

Work on the Great Hall (left) and the new exterior (bottom right) is mostly done, but the master plan proposes new wings and courtyards that could take ten years to finish. Kevin Roche, John Dinkeloo and Associates have been working on the plan for two and a half years, since shortly after Thomas P. F. Hoving became Director of the Met.

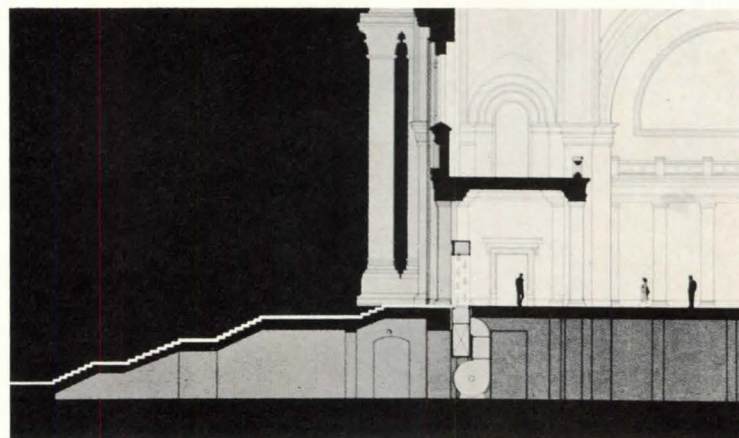
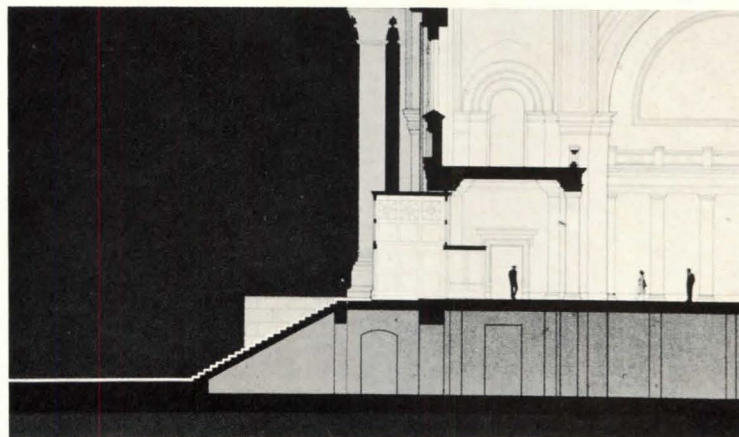
Changes to the once cluttered Great Hall are dramatic. The three domes have been repainted, their stone work repaired and plaster restored. The coatroom, once a bottleneck just inside the door, now opens off the main space and is twice its previous size. Sales of books and prints are opposite, also opening off the main hall instead of the foyer as before.

The Great Hall is now solely for gathering; art works are no longer on display. An octagonal information desk is placed precisely at the center of the central dome, and matching octagons (planters, with peripheral seating) pin down the centers of the other two domes. The entire space—lighter and brighter—is freshened with flowers.

Changes to the exterior are also dramatic. A plaza runs almost the length of the facade (driveways looping behind the fountains); the stairs are now more gradual; and the old vestibule or "doghouse" is replaced by an air curtain.

This early work has stirred some controversy—from those who dislike the fresh flowers (Hoving sought and got a \$2.5-million private endowment for the Great Hall's maintenance, including flowers); or those who object to the removal of any trees from the sidewalk (even when the museum announces they will be abundantly replaced); or the classicists who consider the new bronze entrance doors "like Coca-Cola at a banquet."

A larger argument is whether the museum should add to its facilities at all at this site, an argument affecting the very substance of the dazzling master plan.



Opposite: the Great Hall, designed by Richard Morris Hunt, is freed of its city grime and the various sales counters that had encroached on it. Top right: the old entrance, with its driveway and steep stairs. Bottom right: the new Roche, Dinkeloo plaza, which unifies the whole facade (the north and south extensions by McKim, Mead & White, and the Hunt portion at the center), and provides a flight of stairs to be enjoyed at leisure.

Despite master plans going back almost 100 years, the present museum is a hodgepodge of additions and remodelings done in various styles and with various grand schemes in mind.

The building that began it all was Ruskinian Gothic, finished in 1880 (top right). Later additions (right, to bottom) were the Renaissance wings flanking it, in 1888 and 1894; the Beaux Arts facade, in 1902, which moved the building forward to Fifth Avenue and concealed the earlier buildings behind it (the design was by Richard Morris Hunt, but was carried out after his death by his son Richard Howland Hunt and George B. Post); and the two extensions in classical style along Fifth Avenue, by McKim, Mead & White, finished in 1926.

Master plans have existed from the start. The grand plan by Calvert Vaux, Olmsted's associate and architect of Central Park, envisioned a series of long galleries intersecting at octagonal nodes to frame long interior courtyards. A portion of this plan (opposite, top left) shows the central part, which was all that was built.

Ignoring the Vaux plan (as had Weston and Tuckerman in their additions in the intervening decades) and turning his back on the concept of a building in the park, Hunt extended the museum to Fifth Avenue (opposite, middle left). His own master plan was for a building that would completely envelop the 19th-century museum (opposite, top right). A plan by McKim, Mead & White soon followed (opposite, middle right)—a modified version of Hunt's—like it, never fulfilled.

Each master plan had the same site, a tract leased to the museum by the city in 1878, according to state enabling legislation in 1876. The site is bounded by 80th and 85th Streets, the park's East Drive, and Fifth Avenue.

As it stands now, the Metropolitan is a collection of 17 buildings covering seven acres (opposite, bottom left), with a total floor space of more than 17 acres. Attendance is also gigantic, having reached 5.9 million persons annually (as many as 60,000 on a Sunday afternoon). No new gallery space has been added since 1926, when attendance was 1.2 million a year.

The new master plan—by Kevin Roche, John Dinkeloo and



Park entrance of the 1880 museum by Calvert Vaux and J. Wrey Mould.



Southern addition by T. Weston, 1888; northern, by A. L. Tuckerman, 1894.



Fifth Avenue facade, 1902, according to Richard Morris Hunt's design.



McKim, Mead & White wings, which completed the facade by 1917.

Associates—is described by Hoving as more than an architectural plan, rather a thorough investigation of the museum's philosophy. Physically, the plan will complete the museum's building; "we've come to the end of our collecting," says Hoving, "now we refine."

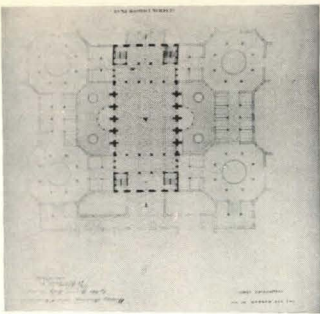
The Roche, Dinkeloo plan has several prominent new wings for the three major acquisitions of the past few years, plus new space for the European and American collections, two new courtyards opening off the park, and in addition (not visible on the drawing opposite, bottom right) a reorganization within each department and a more direct circulation within the museum as a whole. As seen on the following pages, the plan has much to commend it.

Rumblings of opposition to the plan have little to do with the architecture per se, but are in opposition to any further concentration of Metropolitan treasures at this location. To some, the argument concerns over-centralization; to others, encroachment on the park.

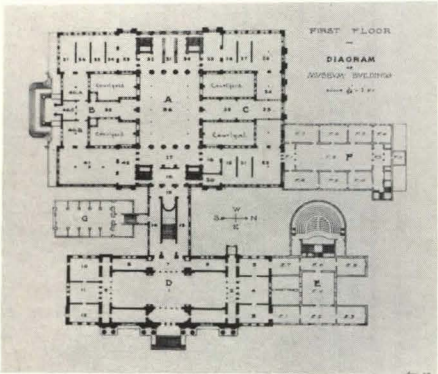
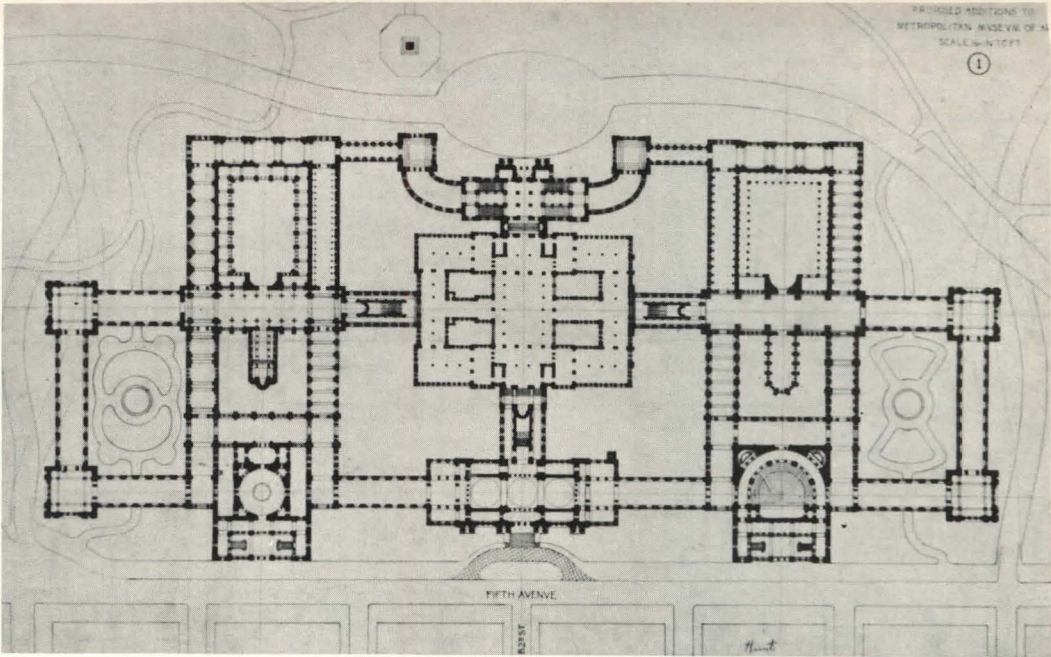
The decentralization issue seems compelling, on its face: a branch of the Met in the Bronx or Brooklyn (near colleges), in the rebuilt Fulton Fish Market, or in some other landmark.

Hoving replies that the people in favor of decentralization "live across the street—they don't know where the South Bronx is." He insists that people in the Bronx or Queens want their own museums, not anything imposed from outside. "Let them do it," he says, "and we'll lend them whatever they want, for as long as they want." To Hoving, the Met is an encyclopaedia; you can't place two volumes here, four there. And he is convinced that the Lehman collection or the Temple of Dendur wouldn't have come to this museum if destined for an outlying borough.

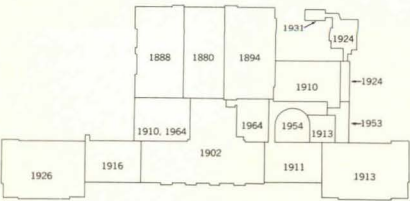
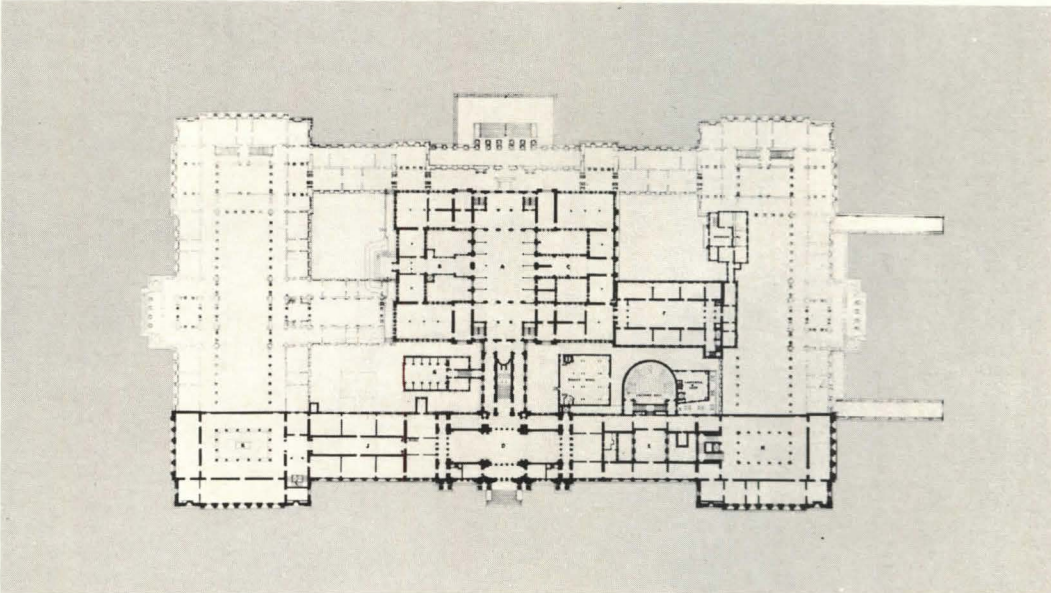
The encroachment issue is somewhat related to that of giantism. The museum states defensively that this latest master plan is the smallest of any, but that doesn't comfort the park-watchers. Much of the new construction, though, will cover parking lots (which will become underground garages). And the Roche, Dinkeloo plan seems to make the most of the park location, opening the museum to the park in ways that can only enhance museum and park.



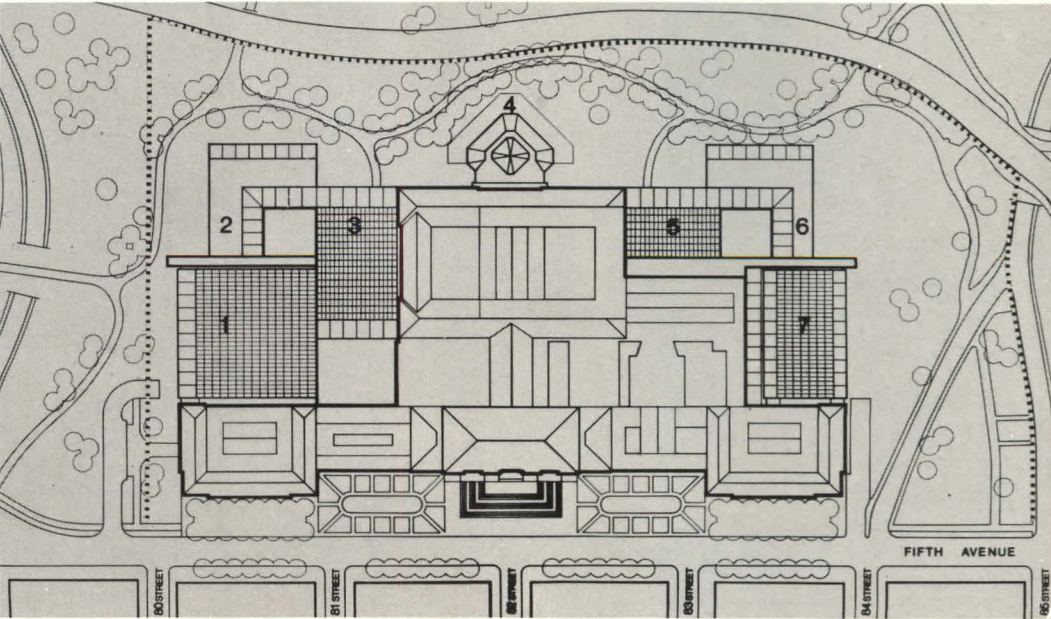
Above: a portion of the museum's first master plan, by Calvert Vaux. Only the central part was built. Right: the master plan by Richard Morris Hunt, with additions completely covering up the original Vaux building and its two Italian Renaissance extensions.

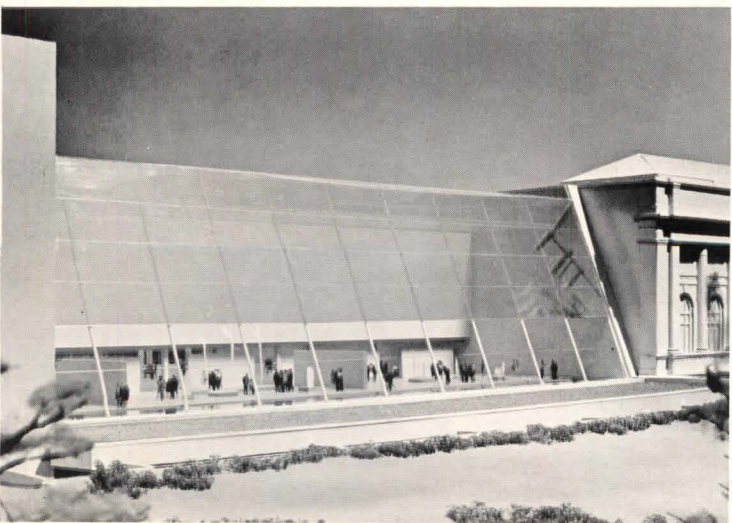
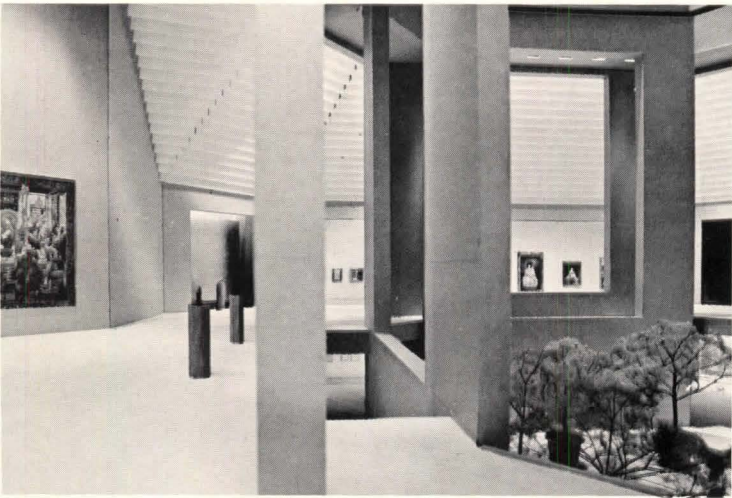
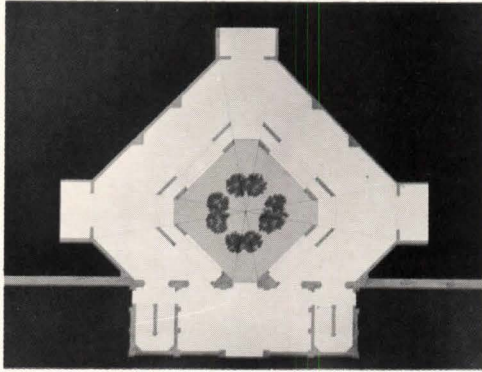
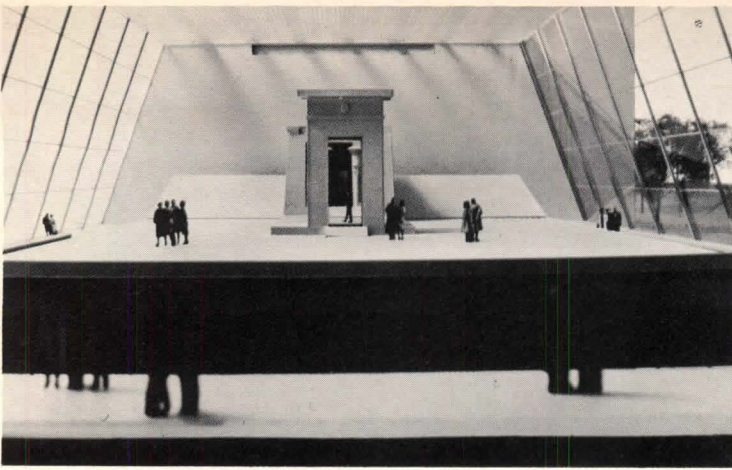


Above: the built portion of Hunt's master plan, bringing the building out to Fifth Avenue and joining the new to the old by a massive interior stair. Right: the museum soon dropped Hunt's son, who had executed the Great Hall after his father's death, and got this plan from McKim, Mead & White.



Above: the museum at present. Right: the Roche, Dinkeloo master plan—1) a glass enclosure for the Rockefeller collection of primitive art, 2) European art, 3) a courtyard opening off the park, 4) the Lehman collection, 5) another courtyard, 6) extension of the American wing, 7) another glass enclosure, for the Temple of Dendur.





The park facade of the Roche, Dinkeloo plan (opposite, top) places the museum firmly in the park, and invites entry through two new garden courts. The new plan will wrap the entire rear in a new architecture, much as Hunt or McKim sought to do in their master plans.

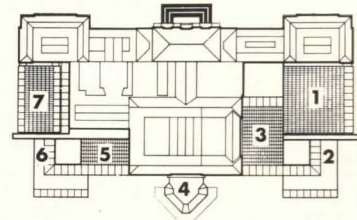
The Temple of Dendur will be glass-enclosed (left, top). The \$100-million Lehman collection (left, plan and middle photo) will be housed in a jewel-like pavilion, the first addition to be built. The Rockefeller collection of primitive art (the third major acquisition in less than three years) will be housed in a glazed wing (left, bottom) corresponding to the Temple of Dendur.

Throughout the museum, the departments will be reorganized and the transitions between them smoothed. Each department will have an orientation area, another area where masterworks are on display, and smaller galleries where the curator can make his own changing exhibits. Storage galleries will be open to the public.

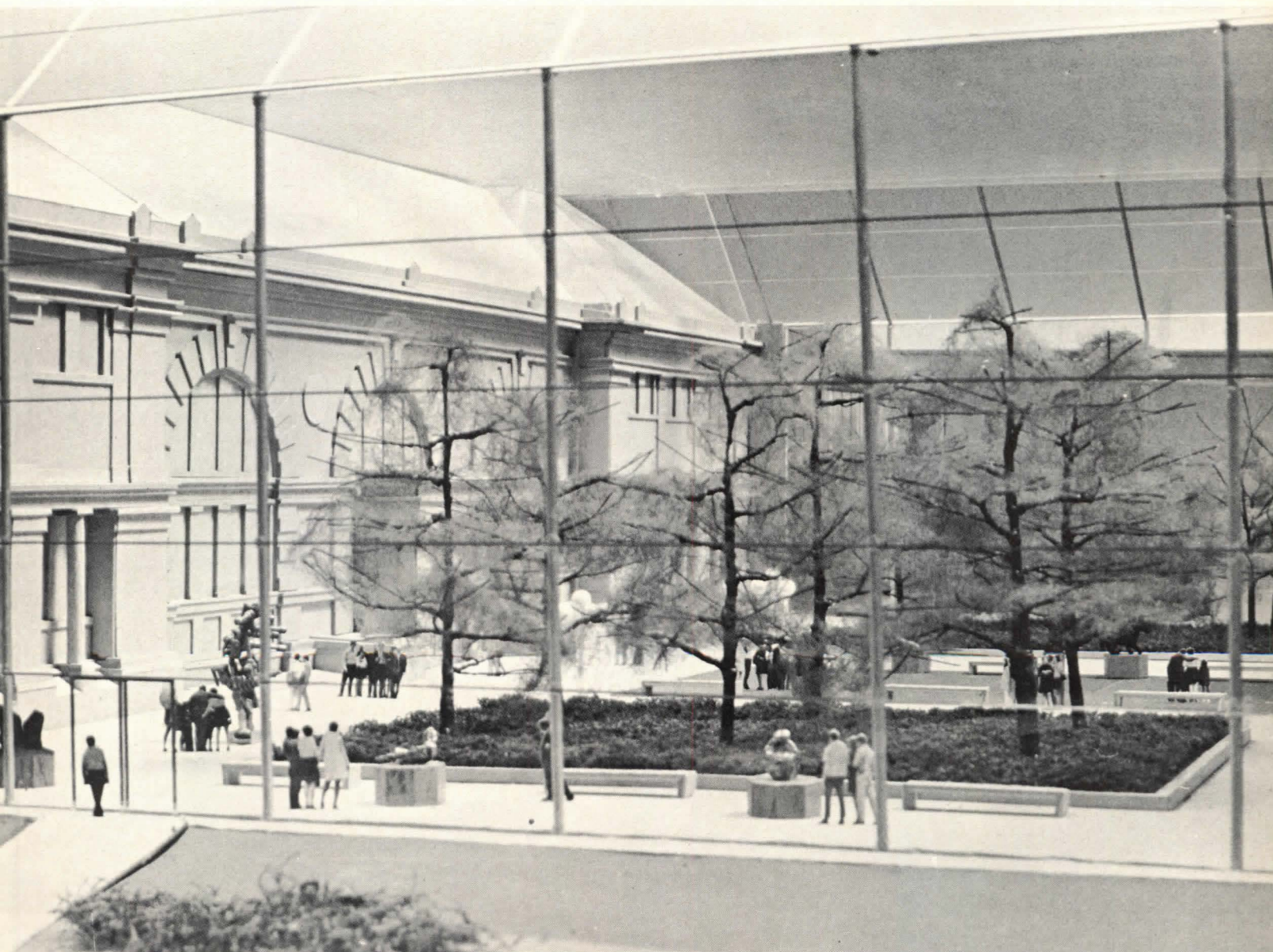
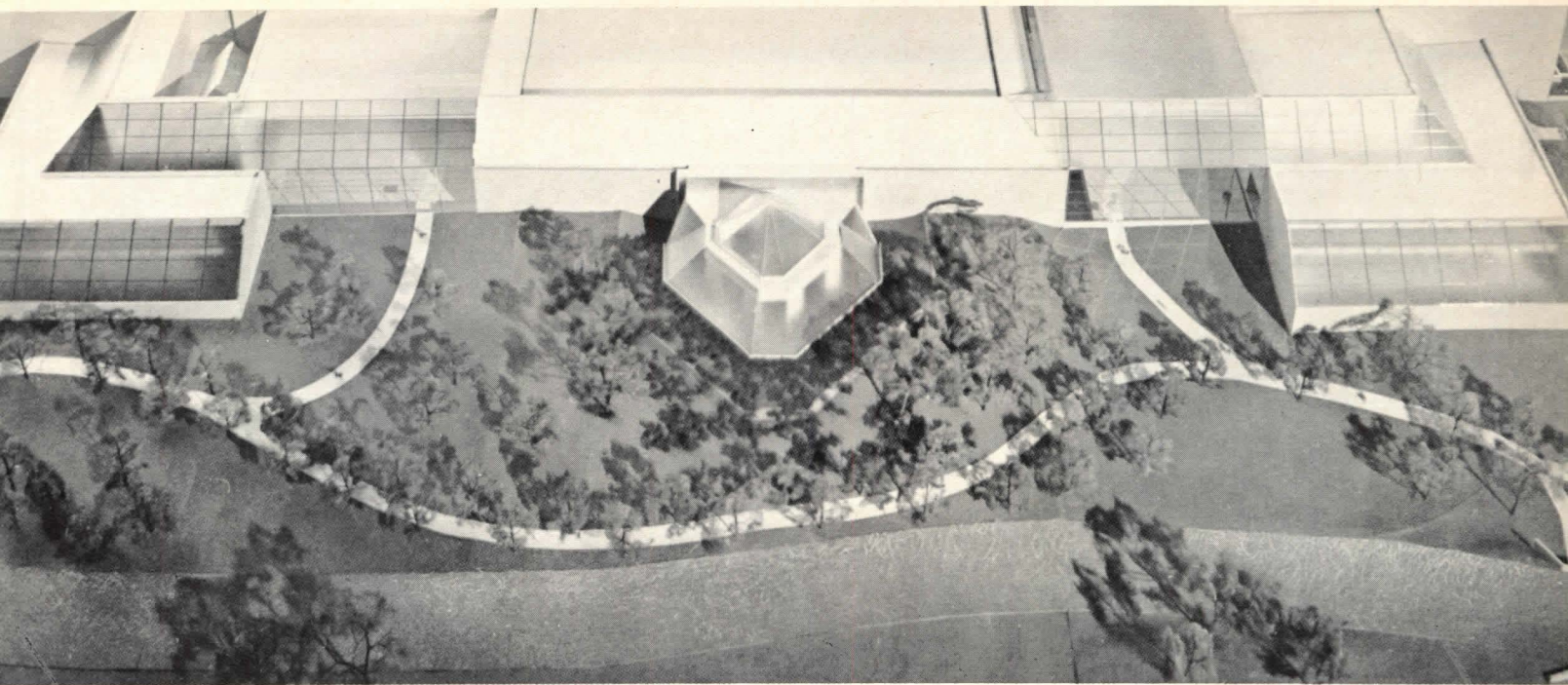
Also proposed is the removal of the grand stair that was built to Hunt's master plan. The museum finds the stair more of a barrier than a passageway to rear galleries, and proposes exchanging it for a broad corridor with escalators alongside and a glazed roof overhead.

The stairway is not Hunt's in any case, it seems; he left no drawings for the Great Hall interior, and it was executed by others after his death. But in 1967, Hoving was still referring to "the Hunt building" as "a masterpiece." Those who would have liked a more open discussion of the Metropolitan's plans during these years suspect that the stair is being removed to put the Lehman collection in a focal position from both front and rear.

If private funds are involved in the separate projects (and the Metropolitan already has pledges of \$28 million), only the Parks Department and the City Art Commission must approve. However, if capital funds are required from the city (which already contributes to operating funds) then the Board of Estimate must vote. There may be some minor battles ahead, but few doubt that the plan will be approved. Perhaps this latest of the Metropolitan Museum's master plans will be its last.



Left, from top: the Temple of Dendur, with the temple placed before a moat to suggest the Nile; the Lehman pavilion (plan, and view into the orangerie at its center); and the glazed wing for the Rockefeller collection. Above: 1) Rockefeller; 2) European; 3) court; 4) Lehman; 5) court; 6) American; and 7) Dendur. Opposite, top: the view from the park; bottom: looking into the south court at the 1888 facade. PHOTOGRAPHS: Page 42, Maude Dorr; page 43, bottom, New York Times. All others, courtesy Metropolitan Museum of Art.



Americans are growing more and more concerned about the quality of life in this country. Today, all of us must be concerned with factors that were touched only tangentially years ago. These include ecology, environment and social responsibility. Americans are demanding an end to practices that have contaminated the air we breathe, the food we eat, and the water we drink. They are aroused over the esthetic, audio, social, economic and physical pollution that has taken place. They are demanding that steps be taken to repair the damage already wrought.

When he signed the National Environmental Policy Act on January 1, President Nixon said: "... the 1970s absolutely must be the years when America pays its debt to the past by reclaiming the purity of its air, its waters and our living environment. It is ... now or never."

The Act requires all federal agencies dealing with environmental problems to use a sys-

closely with other bureau divisions, and is developing for field use procedures to assure that full consideration is given to social, economic, esthetic, cultural, and environmental factors in all phases of the highway program.

In line with the drive to improve the quality of life in America, the Federal Highway Administration has created a special task force on environmental considerations to assure that all the programs of the Bureau of Public Roads, from planning through construction and maintenance, will reflect our increasing concern in this area.

The American Association of State Highway Officials has created a Joint AASHO Liaison Committee on Environment. Many non-highway department conservation and environmental groups are represented on this committee.

I think it should be apparent by now that the American public is disinterested in utilitarian improvements that tend to degrade the quality of life. They insist that the physical environment and the social environment serve the American people. They want our country made a cleaner and more enjoyable place in which to live.

For many years, the public supinely accepted without strong protest any abuse of the environment, as long as it was done in the name of progress. But those days are over. They still want progress but they don't want the country defiled.

I feel that all levels of government have a mandate from the American people to furnish the improvements that are needed, but to do so without causing violence to our natural and man-made resources.

It is interesting that in these days of widespread dissent and contention, the one issue that is uniting most Americans of all ages and all political views is the fight being waged against environmental abuse. All college youngsters appear agreed on this effort regardless of the length of their hair and regardless of whether they are politically left, right or center.

Those of us who have been associated with the highway field have not completely ignored ecological and environmental factors in the past. Perhaps we did not do enough, but we were not indifferent. We may not have used the words "ecology"

and "environment" as frequently as they are being used today, but we have been concerned with social responsibility in the highway program.

The Bureau of Public Roads has estimated that last year it had spent over a half-billion dollars for elements that legitimately can be equated with environmental improvement. They included beautification, landscaping, rest areas, more costly highway design features such as buffer zones and wide medians, abatement of noise and air pollution, erosion and rodent control, and relocation assistance and housing to improve the social environment.

There is a new philosophy underlying the program. It is predicated on the fact that social responsibility is an important aspect of highway building. We must constantly ask ourselves if we are seeking to satisfy transportation needs at the expense of other vital needs of the American people. We must be concerned with the effects highways may have on the people living in the areas traversed, on their neighborhoods, their environment, their institutions and their resources.

We must not forget that in addition to furnishing the transportation arteries so vitally needed, the highway program can be used to protect, preserve and wherever possible, enhance those values so important to the American people.

If time permitted, I could cite dozens of instances of the highway program being used to preserve or improve the environment. I would, however, like to discuss a few.

In the state of New York, ducks and birds have found a quiet nesting place in the median of Route 17 in Tioga County. A stock fence protects the sanctuary, and provision has been made for motorists to view the area.

In South Dakota, an embankment was built on State Route 63 to dam a creek running through the Rosebud Indian Reservation. As a result, Indians, as well as others, have a lake where they can enjoy fishing, swimming and boating. The lake also serves as a watershed storage facility.

On Interstate 94 in North Dakota and Interstate 80 in Ne-

ECOLOGY AND ENVIRONMENT

BY R. R. BARTELSMEYER

tematic, interdisciplinary approach. We are recommending that state highway departments consider adding interdisciplinary groups to their own staffs.

Every office in the Bureau of Public Roads is concerned with environmental elements. We have established an Environmental Development Division in our Office of Right-of-Way and Location which has the responsibility of dealing with a wide spectrum of environmental factors. The division is made up of an interdisciplinary team consisting of architects, urban planners, landscape architects, sociologists and economists, in addition to engineers. It works

Mr. Bartelsmeyer is the Director of the U.S. Bureau of Public Roads, which is a part of the Department of Transportation. His statement to the New York State Association of Highway Engineers in April does not contain much that is new to readers of the Forum. But it seems of significance because of the occasion on which it was made, and of the position of the man who made it.

braska, the routes were responsible for the development of lakes for fishing and boating, creating recreational facilities where they never before existed.

Under the Bureau of Public Roads' multiple use and joint development programs, shared use of right-of-way is encouraged in an effort to shape the environment in accordance with local goals. Highways are designed in harmony with a locality's overall comprehensive plan. They are built for people and not motor vehicles.

Last year alone, approvals were given 56 major non-highway structures on rights-of-way. These included office buildings, community facilities, shopping plazas, airport runways, markets and restaurants. In addition, hundreds of non-structure projects, such as parking facilities, miniparks and playgrounds were approved.

Earlier, I mentioned relocation housing assistance as an improvement of the social environment. This is an area with profound economic and sociological implications, which is receiving unprecedented attention today.

Substantial compensation and relocation assistance are now available under the Federal Aid Highway Act of 1968. Liberal moving costs can be paid to displacees, in addition to special additives and incidental payments. For home owners, a replacement housing payment of up to \$5,000 can also be made, in addition to the fair market value of the home, under certain conditions. An additive payment also can be made to tenants of up to \$1,500 to assist them in attaining replacement decent, safe and sanitary housing. Businesses are dealt with just as liberally.

The Federal Highway Administration is wholeheartedly committed to easing the burden imposed on those uprooted by the federal aid highway program. We subscribe without reservation to the policy articulated recently by Secretary of Transportation John A. Volpe who said no projects will be approved if they involve the dislocation of people unless and until adequate replacement housing has already been built or provided for.

Volpe's action guaranteeing decent, safe and sanitary replace-

ment for those dislocated applies not only to highway projects but to all federal and federally assisted construction projects under the jurisdiction of the Department of Transportation.

His policy is a humane one that is aimed at rectifying a long-existent inequity wherein a few were asked to carry a disproportionate share of the load.

The statutory deadline of July 1, 1970, for full state compliance with Chapter 5 of the Federal Aid Highway Act of 1968, including the necessity of providing decent, safe and sanitary replacement housing, is fast approaching.

The magnitude of the relocation program is indicated by the following statistics, even though all states were not fully operational during the period:

During the calendar year 1969, 21,734 dwellings, 259 farms, 3,769 businesses, and 145 non-profit organizations were displaced by federal aid highway projects. About three-quarters of the persons displaced were white. Approximately \$4,150,000 worth of residential moving cost payments were made during this period, averaging \$204 each. Business payments totaled \$5,180,000, averaging \$1,615 each. Farm payments totaled \$106,500 and averaged \$447 each.

Replacement housing payments or additives to fair market value were made in the case of 2,075 owner-occupants, involving 6,622 individuals. They totaled approximately \$4,810,000, with the average being \$2,317 each. Comparable payments were made in connection with 2,129 rental units involving 5,979 persons. They totaled over \$1,645,000, averaging \$772 each.

Payments for costs incidental to the transfer of property to the state for highway purposes averaged \$129 each for housing units, \$49 each for farms, and \$387 each for businesses.

Eighty-one per cent of all residential displacements occurred in urban areas and 19 per cent in rural areas. We have estimated that during the next several years, displacements resulting from federal aid highway improvements will average approximately 25,000 dwellings annually.

In spite of the obstacles facing us in this program, I am confident that through the best efforts of all, we will meet our responsibilities in carrying it

out, and we will see that all persons dislocated because of highways are ensured relocation in decent, safe and sanitary housing.

A particular facet of the highway program has not received the attention it should. That is the necessity to keep the public informed of the effect a new road or the improvement of an existing one may have on them or on the area where they live.

What we must keep in mind is that the success of any public project depends largely on its acceptance by the people who may be affected. If it is rejected by them, the project faces tough sailing.

Americans are highly intelligent and generally come up with a correct conclusion—if furnished with all the facts about an issue. Unfortunately, what sometimes happens is that they are not given all the facts, and the information they have is inadequate. As a result, they may oppose a project which otherwise they might have supported.

I feel we in the highway field have an obligation to lay all our cards on the table when a project is proposed. The "two public hearings" procedure we now have offers a decided advantage over the one hearing. But I feel there should be informational meetings with the public before any hearings are held. If we want the public's support, we must alert them at the earliest possible moment as to what we plan.

I see nothing wrong in holding informational meetings just to notify the public about what a state highway department may have in mind. I think the more and the earlier the public can be told, the better chance a project has of winning popular acceptance. I am convinced that many of our problems stem from failure to disseminate information the public is entitled to have.

Another means of keeping the public informed is to notify newspaper editors of what is contemplated in their areas. Editors are fiercely concerned with the welfare of the towns or cities they cover. They are always interested in improvements that will benefit their areas.

I am not advocating the visits to newspaper offices be utilized to try to "sell" an improvement.

Far from it. The sole purpose of such a visit would be to furnish information to the editor so that he has all the facts to make a judgment. If he feels a proposed project is worthwhile, he probably will endorse it. If he feels otherwise, he will oppose it. It is as simple as that.

I hope I am not giving the impression that Americans are antihighway. That just is not so. Every objective gauge for measuring the attitude of the American people towards their motor vehicles indicates their romance with the automobile is far from waning. They make it clear they want better highway transportation to accommodate cars.

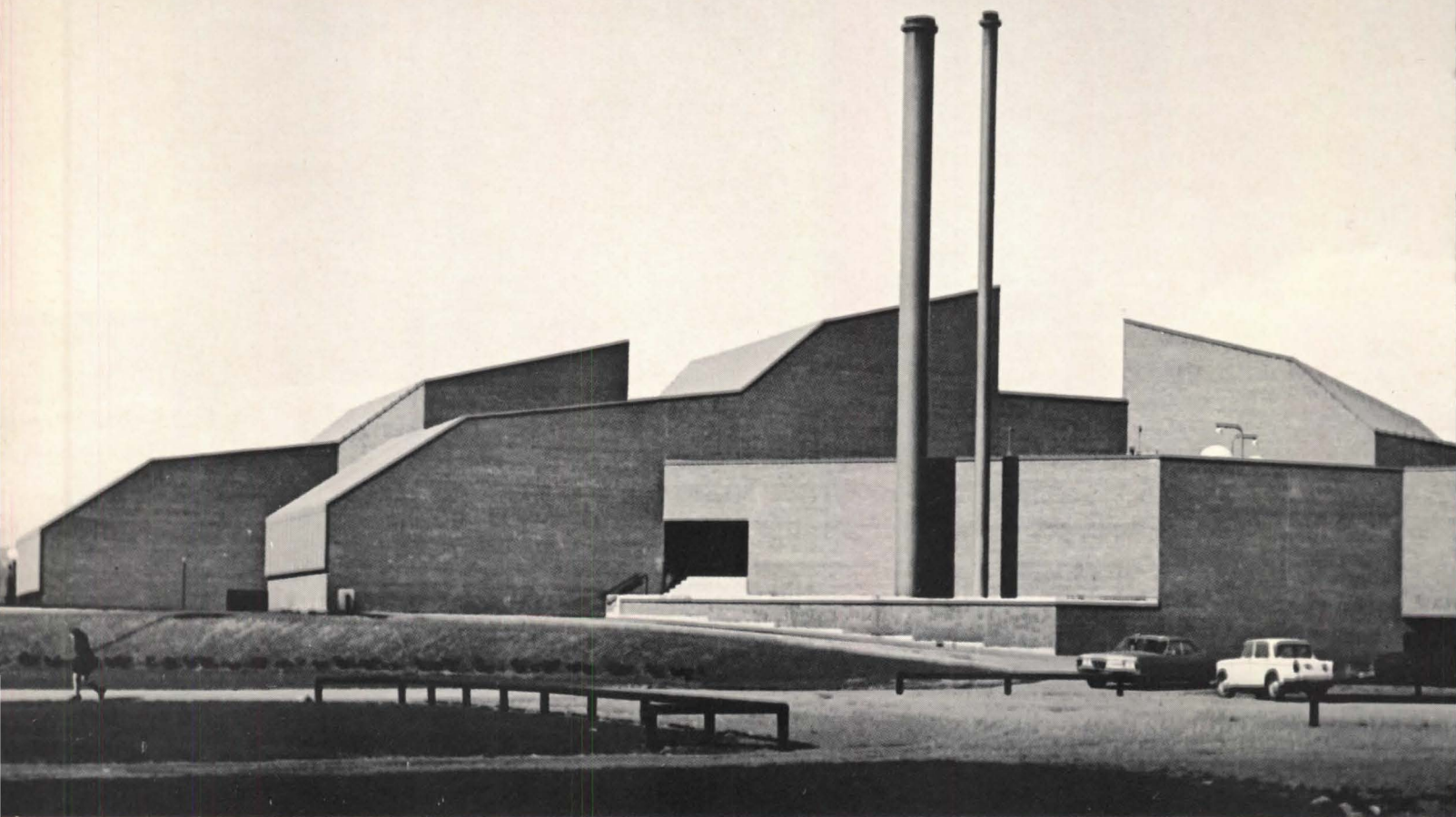
Two surveys conducted independently by two Philadelphia-based research firms showed auto transportation is a deeply ingrained way of life that Americans wish to continue. A majority of those polled reported they consider the automobile as much closer to the ideal mode of transportation than other modes for all trips except business trips over 500 miles. Public transportation of all types—air, train, bus, rail transit and taxi—was considered closer to the ideal mode by only 12 per cent of those who responded.

The increasing motor vehicle population offers indisputable proof that Americans look to automobiles to transport them from place to place. Today's 105 million motor vehicles are expected to increase to over 146 million in 1985, while motor vehicle travel, now over 1,060 trillion vehicle miles, is expected to climb to 1.5 trillion by 1985.

It may appear inconsistent, on the surface, to state that the American people endorse the highway program, while at the same time, ways of winning greater public support are discussed. I don't think it is illogical. I am convinced that much of the discord we encounter stems from opposition to particular projects which, in turn, is due to lack of factual information. I have enormous faith in the judgment of an informed citizenry.

If additional corroboration as to the popularity of the nation's highway program is needed, it can be found in the huge investment of funds made to improve the highway system. If the public

(continued on page 82)

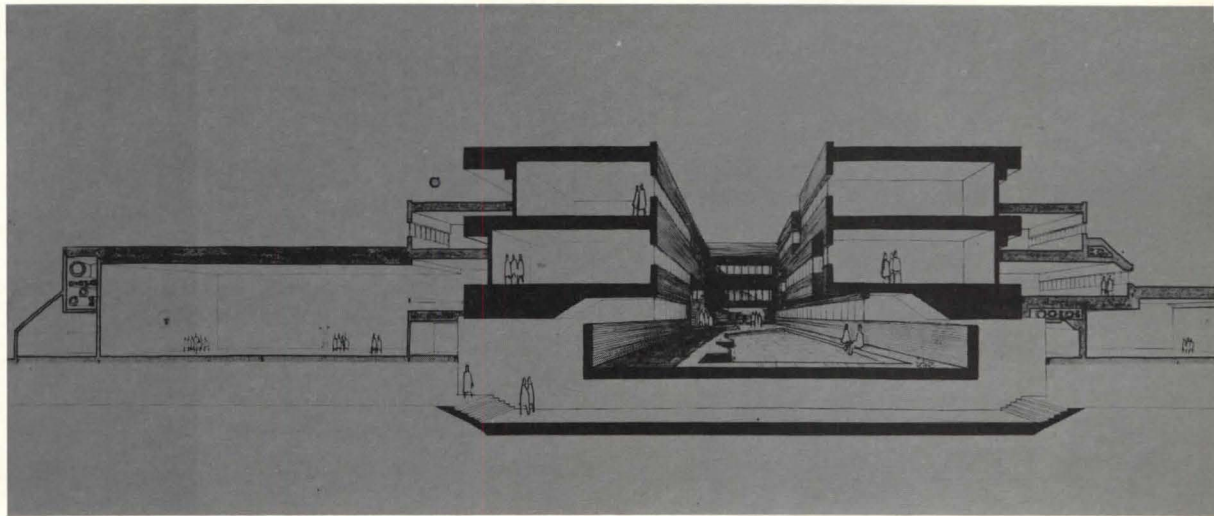


A SCHOOL THAT IS A STREET

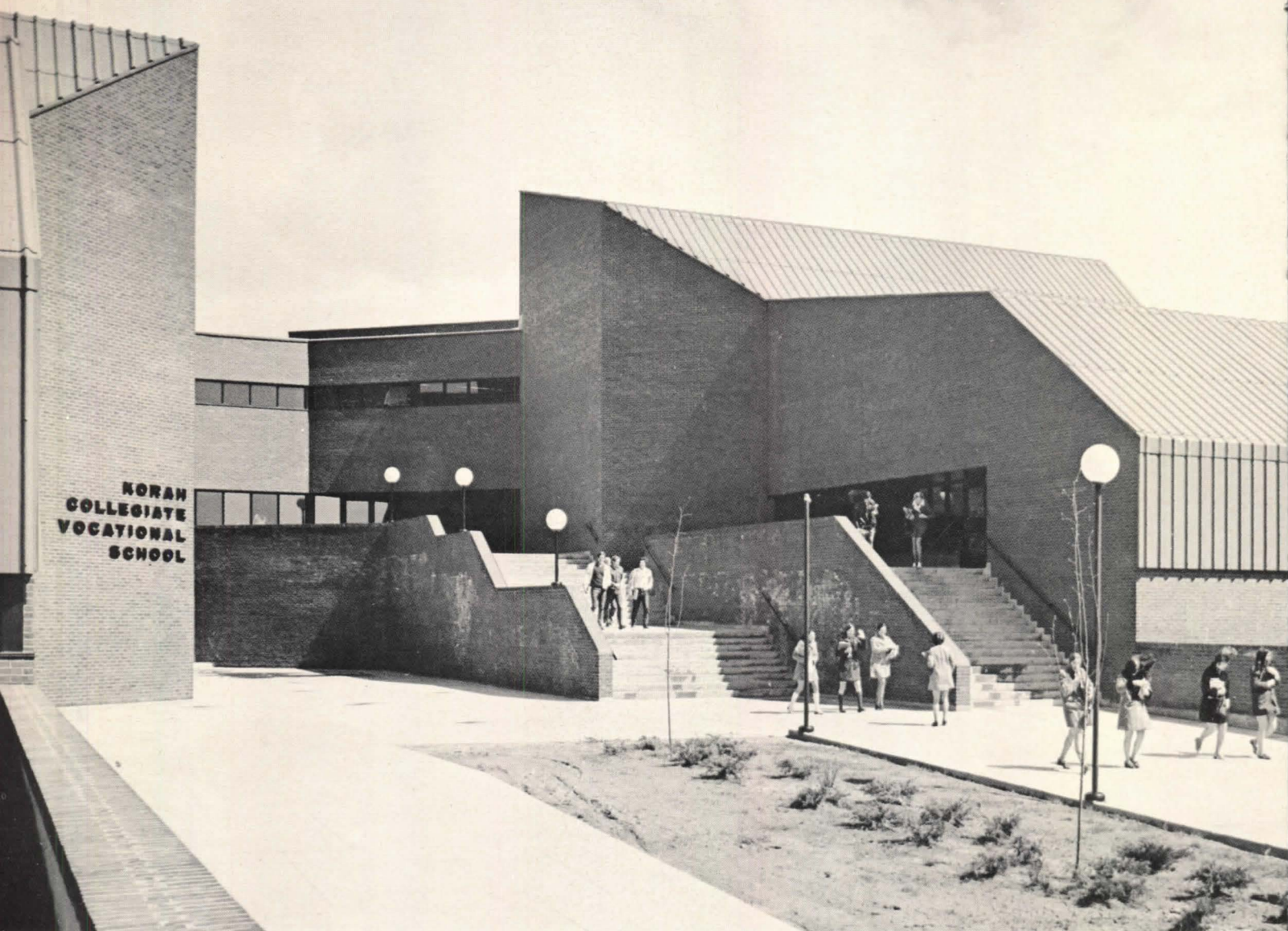
In a conscious effort to fashion school life into something closer to real life, the architects of this collegiate and vocational school in Ontario, Canada—Craig, Zeidler and Strong—have designed their building to be two things: first an actual circulation link connecting two existing streets that bound the site; and, second, to be a small community (for an eventual 1,800 students) in itself.

It is an interesting approach, and it comes off well: the build-

ing, three stories high in most areas, is in fact a pedestrian street, with academic and administrative facilities left and right, and bridged by pedestrian walkways overhead. The initial capacity of the school is 1,200 students, but the structure was designed to expand and accept a 50 per cent increase in enrollment; and the masses in the photograph above suggest a building that can grow without upsetting any formal, esthetic



View of Korah Collegiate and Vocational School from the south shows dramatic massing of major elements: cafeteria block at left, and auditorium at right. The smaller photo and section show the student street that runs through the school and connects the two real streets that border the site. Glazed bridges at second and third floor levels connect the two halves of the school. Fenestration is a 3-ft. window band at eye level along one side of every classroom.



applecarts. Still, the architects knew exactly what they were doing as artists: for this is an extraordinarily handsome pile of bricks.

The requirements for Korah Collegiate were anything but simple. There was need for shops, classrooms, laboratories, administrative offices, gymnasias, an auditorium, cafeteria, library and other communal spaces (plans, above right.) And it was important to provide for spatial

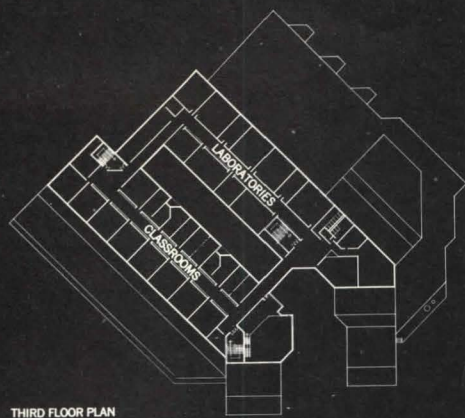
flexibility—anything from single-student carrels in the library, through small group instruction spaces (6 to 15 students), medium group instruction (30 students), large group instruction (90 to 150 students), and, finally, mass-assemblies in the auditorium. Even these had to be designed flexibly: the total space of the auditorium houses 760—but there is a different arrangement that will give you a 610-seat hall, plus a separate 150-seat

space; and, finally, there is still another auditorium arrangement that will give you a 460-seat theater plus two separate spaces, each holding 150 persons.

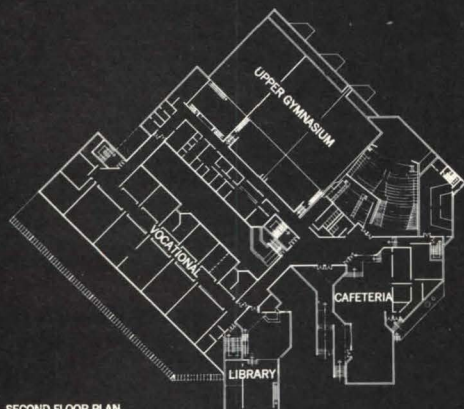
These different instructional areas are all accessible, in one way or another, from the second floor, which is central to all of the building. An elaborate complex of steps (photo above) rises from the student street to the second floor level, and from that level students have access to the

various teaching areas. Most administrative offices are also located on this floor.

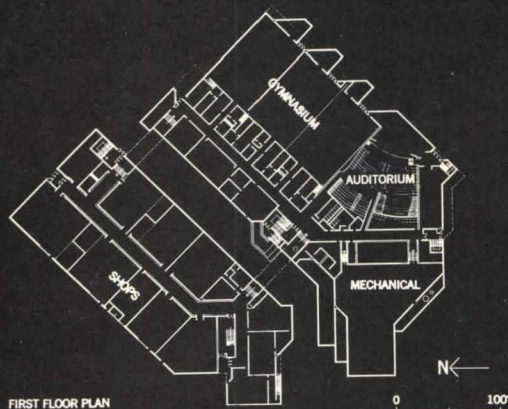
Although the building appears, at first sight, to be fluid and informal, its plan is, in fact, a very disciplined overlay of straightforward circulation patterns: in addition to the student street, which crosses the site on the diagonal, there is a rectangular donut pattern of corridors that occurs on the second and third floors, and seems as



THIRD FLOOR PLAN



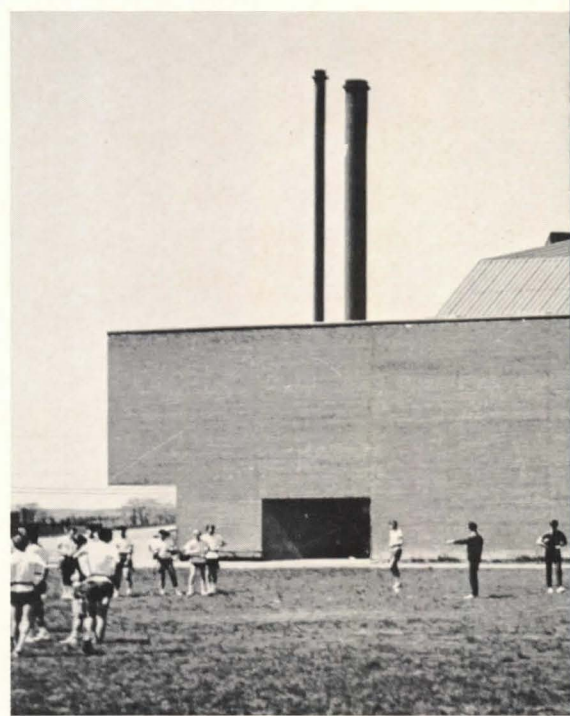
SECOND FLOOR PLAN



FIRST FLOOR PLAN



Stairs lead from student street up to the second floor level, which provides access to all the major spaces in the school. The library is seen at left, the cafeteria at right. The former is close to the main entrance and can be used separately in the evenings. The cafeteria, which is also shown in the two smaller photos above, is an intriguing space, quite arbitrary in form and obviously much more pleasant than the usual dining facility found in a school building. The ceiling is purple, and the stripes are red.



compact as anything that could have been devised for a more conventional building. (The short ends of the rectangular donut are the glazed bridges visible in the photos on pages 51 and 54. Because students crossing those bridges look down into the student street, they can always orient themselves in relation to other areas of the building: there is no doubt about where you are, as there often is in other "donut" buildings.)

The forms of this building are not entirely arbitrary. The fenestration, for example, is a continuous 3-ft. window band at eye level along one side of each classroom, which allows a student a look out, while still maintaining a sense of enclosure in the classrooms that will promote concentration on work. The window pattern is broken only for special spaces, and those breaks punctuate the facades. The frame is steel, the skin is

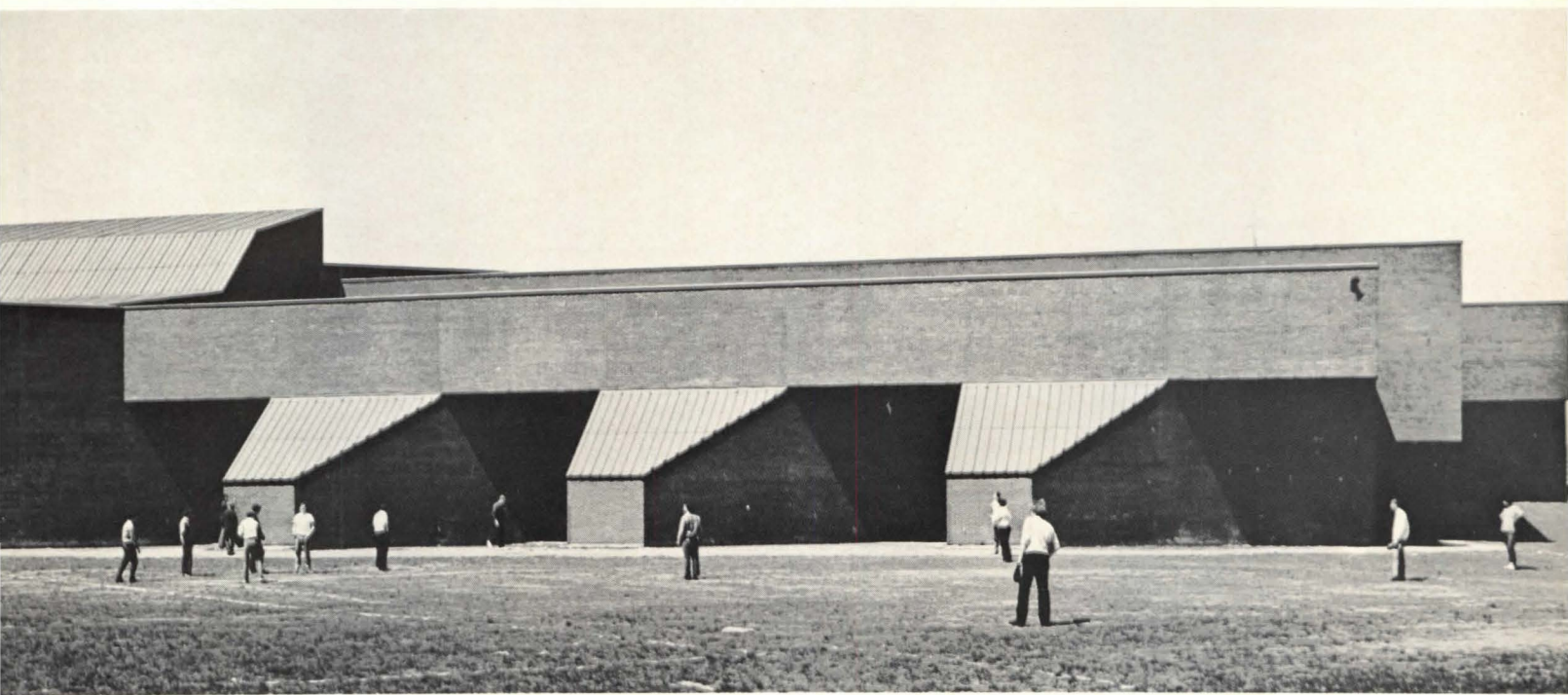
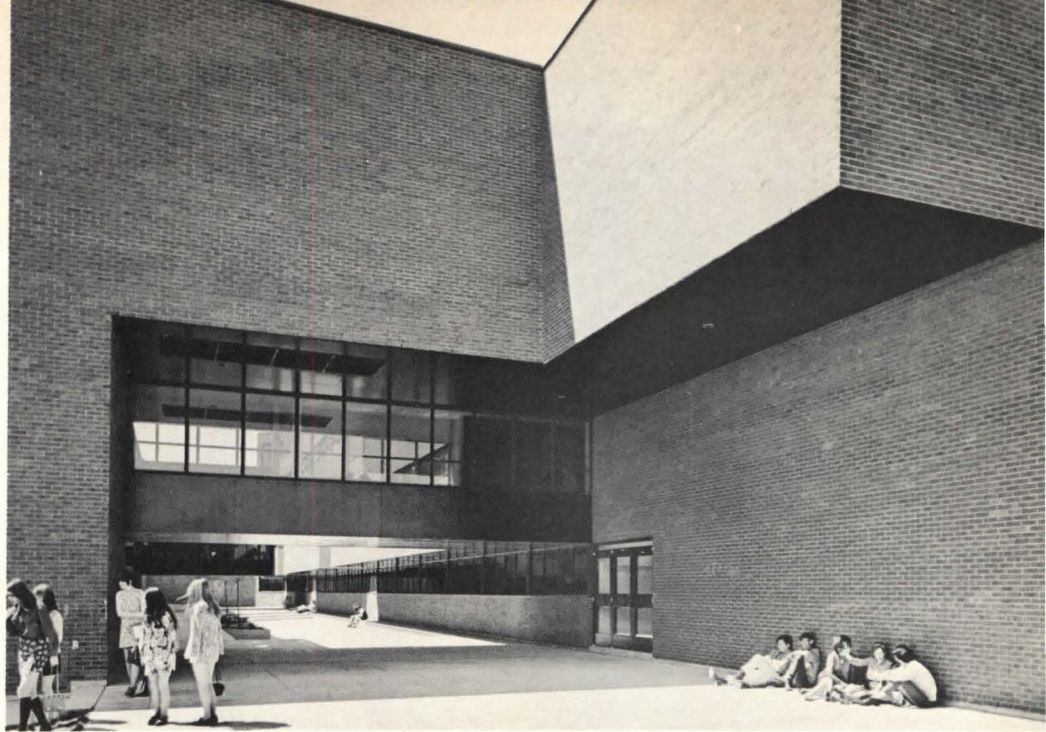
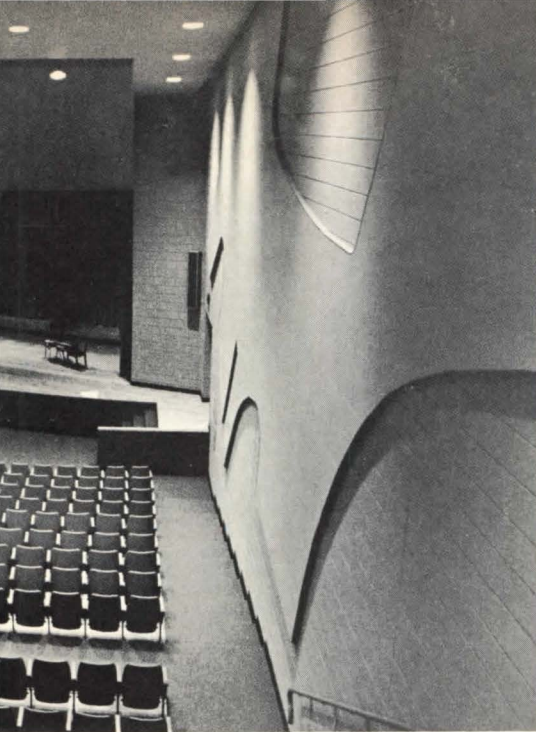
brick, and the roof surfaces are clad in asbestos. These roof surfaces are steeply pitched and an important visual element in the massing of the building. In some instances, one feels that the pictorial quality of these building masses may have been carried just a little far: the three little auditorium-like protrusions visible in the long photo above turn out to be only storage spaces attached to the three gymnasias. Still, even such

rather questionable decorative touches have been handled with great assurance and sensitivity.

FACTS AND FIGURES

Korah Collegiate and Vocational School, Sault Ste. Marie, Ontario, Canada. Architects: Craig, Zeidler and Strong (Eberhard H. Zeidler, partner in charge). Engineers: G. Dowdell & Associates (structural); W. Hardy Craig & Associates Ltd. (mechanical and electrical). General contractor: R. Sampson Construction. Building area: 190,000 sq. ft. Cost: \$3,780,000 (contract price).

PHOTOS: Panda/Croydon Associates.



Two further views of the central student street are shown at far left and at top right. The auditorium (center photo) is divisible into a number of different-sized spaces: the balcony area and the seating below the balcony can be isolated by folding walls to form two lecture spaces, each seating 150 persons. That still leaves a 460-seat theater. The "murals" in the auditorium are asbestos panels (for sound absorption) cut in free-form shapes. Long photo shows view from the east. Protrusions are storage areas next to the three gymnasia.

Two years ago Whitney M. Young Jr. addressed the AIA convention in Portland, Ore., charging that the architects had distinguished themselves in civil rights by "thunderous silence" and "complete irrelevance." One year ago the AIA's Task Force on Equal Opportunities (formed in response to Whitney Young's challenge) reported that "about 200" black architects in the AIA are "about 50 per cent" of the black architects in the country. Some feel the number is lower, about 230 for a total of 29,000 practicing architects.

This past year saw a good deal of activity aimed at changing a profession that is 98 to 99 per cent white—activity in the schools, in community-based design centers, in architectural offices, AIA chapters and the national AIA. Is it significant? Will it last? Here is a report on various programs and attitudes.

One educational program that needed no prompting is the one at ARCH (Architects' Renewal Committee in Harlem). Now in its second year, it puts a small

and technical work. Symes and Psychologist Rae Banks know their students intimately; each student even has Symes's home telephone number.

The offices are enthusiastic, says George S. Lewis, director of Professional Affairs for the New York chapter; "they find it doesn't cost them money because the students catch on so quickly." He cannot praise the program highly enough; he fears that the AIA's national scholarship program (of which more later) will send unprepared students to college.

Money is a serious problem; the '69-'70 budget was \$152,000 (mostly given by the Ford Foundation, which is ending its two-year support), and the figure could easily double with more students at college. The New York chapter is undertaking a mammoth \$45,000 scholarship drive this year, but Symes has grave doubts if the program will run again—"I don't want to raise people's hopes if there is no money for college." Ford prefers only to initiate a program, he reports, and he is unhappy to hear his program defined as unsuccessful simply because no other funding has been found. William C. Pendleton of the Ford Foundation is enthusiastic about ARCH's program and believes the local chapter should have picked it up. He'd like to see a lower budget, both for the training program and the college expenses (getting scholarships from the universities), and he reports that if a "satisfactory modification in costs" can be made, "we'd be responsive."

Another ambitious training program—at the Boston Architectural Center—has just received \$168,800 of federal funds, for 40 trainees. The first 19 of their 39 weeks will be spent at BAC in drafting and related training, job orientation and counseling; the next 20 weeks, on-the-job with a participating firm of the ad hoc consortium.

The seemingly generous \$4,200 per student includes a stipend of \$80 for the first 19 weeks, with human relations training and \$35 a week compensation for the employers. Sanford R. Greenfield of BAC says that the funding is actually quite tight and best suited to big industry, not to a nonprofit outfit like BAC (which, in any case, does not stand to benefit from the

new skills of its trainees). BAC is uniquely able, however, to reinforce the daytime program with its regular evening program, giving the trainee a "career ladder."

Since 1968, BAC has been running a 15-week training program with the local antipoverty agency (ABCD); of those who finished training, 86 per cent are still employed.

Another program moving into higher gear is reported by Daniel, Mann, Johnson & Mendenhall, in Los Angeles. With four other large A & E firms, they set up a work-study year, sending high school graduates to the Los Angeles Trade Technical College every morning, and to on-the-job training every afternoon. A federally-supported agency, STEP, screens and counsels. As the program heads into its third year, ten smaller firms have joined in.

Urban League: on the job

The National Urban League's On-the-Job Training program (OJT) is just that—training on the job. Under a \$9.1 million contract with the federal Manpower Development Training Administration, the largest ever awarded to a private agency, the NUL will place 7,000 trainees in various jobs. Since 1965 they have placed 60,000 persons, with 89.7 per cent still on the job six months after training ended.

For a training period of up to 44 weeks, the local Urban League affiliate maintains close touch with the trainee, giving him tutorial services and individual and group counseling. The hiring firm is reimbursed up to \$50 a week per trainee.

For architectural trainees, the program has yet to prove itself. Last July it was announced by the AIA's Urban Design and Development Corporation that it would put 50 trainees—as a start—into architectural offices across the country. Ten months later there were "about 30" in only six cities—Akron, Hartford, New York, San Francisco, Seattle and Washington. (Under its contract, the NUL can operate the program from 30 of its 94 affiliates.) According to one observer, liaison between UDDC and the NUL was not good, with the Urban League trying to work where the architects' response was minimal, and the architects trying to set up a program where no Urban League

MINORITIES IN THE PROFESSION

group through an intensive summer session, with a weekly stipend of \$40, then places them at \$80 a week in architectural offices. Academic courses go on during the winter for three nights a week. Of the 13 architectural trainees in the first summer/winter sequence, six have gone on to architecture schools; 12 of the present batch of 17 are going to college this fall.

Arthur L. Symes is the hard-working director of ARCH and this program. He personally visits each office; they must not use his people as office boys. "The students never expected this second chance," he says. They had been shipping clerks, porters, you name it. He blames the guidance counselors for not knowing their students. He also blames the schools, for letting these young people flunk out or drop out—the same students who now do well both in academic

affiliate had ever existed before.

The OJT program for architectural technicians in Washington, D.C., however, has placed 12 trainees since mid-February.

The longer history from San Francisco is less encouraging. An OJT program for junior draftsmen began in '67, under an earlier Urban League contract with the Department of Labor. The local AIA originally intended to pay one-eighth of each trainee's salary—\$10 a week for each of 20 trainees for 26 weeks—by assessing every chapter member \$8. About 75 per cent of the 600 members paid up.

A one-year evaluation of the program by the Bay Area Urban League reported 14 trainees in 11 firms. The training program had provided a "meaningful work opportunity" for the trainees—and a good education for the architects, too! A year later, as of October 1969, the overall totals were: 39 trainees placed in 25 offices (San Francisco and San Mateo County), nine still employed by the original firm, one employed by another firm, ten resigned to attend school, five drafted, 14 whereabouts unknown.

Karl Treffinger, president of the Northern California AIA, feels that only 20 to 30 offices in the area are large enough to provide the easy work and time-consuming supervision that an untrained person needs. "Maybe the Bay Area isn't the right place for this—too many small offices." He mentions that a lot of the trainees become disenchanted—they are out of their depth at this stage of their training, and they earn less money than they could elsewhere. "Maybe the money belongs in scholarships. I'm still hoping that OJT will work, but we ought to move into a scholarship program, too. I'm not averse to going back to the membership for another assessment." Velma Parness of the Bay Area Urban League wouldn't want to see the AIA assessed again for people they do not know personally. She would prefer to see an architect help someone he already knows—either getting him into architectural school or helping him on tuition.

There are other disappointments with the OJT program. Walter South, who was with NUL until recently, and was in on the original discussions between the AIA and the Urban

League, had hoped that the program would create architecture students. A firm would get an OJT contract, he explains, if it agreed to put up scholarship money when a trainee turns out to be college material. But the AIA delayed writing this kind of proposal, he says, "so instead, we ended up subsidizing architectural firms that ought to be hiring these people anyway."

As Hugh Zimmers sees it, from his position this past year as consultant to the AIA's new Task Force on Professional Responsibility, the Urban League OJT program for draftsmen is in a state of "unhealthy limbo." It needs a full-time person at the AIA, he believes.

Short-lived attempts

Several interesting programs have been totally dropped for economic reasons.

Eggers & Higgins opened a 16-week training program in their own office soon after Whitney Young's address, hiring a professional educator to come in every afternoon to teach drafting—and some arithmetic. "Basic education was more important than we realized," says Frank W. Munzer, the partner who worried the program through two successive groups of 12, in New York City.

The course centered on a set of drawings for a small hypothetical library; the students worked individually, with the instructor acting as job captain. Munzer strongly recommends a professional educator—most professionals have long since forgotten the basics and therefore expect "too much, too fast" from a trainee. The primary aim of their program, as Munzer sees it, was to get people into jobs and earning money. If they can go further, fine.

"We thought some of the students were giving excuses at first, telling us about a holdup, or about spending all day in a clinic," says Munzer. "It took a while to adjust our thinking. I remember telling one of our students, 'My father didn't miss a day of work in 20 years,' and he told me, 'My father didn't work for 20 years.'" Eggers & Higgins did some personal counseling, and some was done by the Vocational Foundation Inc., which screened the students, and paid \$25 of their \$80 starting salary. Both E & H groups had one white student; to Munzer

the problems of poverty are similar regardless of color.

Ultimately, E & H found the program too expensive to continue. "It cost \$1,300 per student," says Munzer; "we couldn't continue to prepare people for all the offices in the city." The firm still has two of the junior draftsmen, and altogether 15 of the 24 are working as draftsmen around New York City.

An "apprenticeship" program was conducted for a year by RTKL Inc., Baltimore's largest architectural firm. The program was less intensive than the one at Eggers & Higgins, running only two evenings a week for about ten students (black and white) who were either working or at school. According to a member of the firm, the program ended "because we couldn't staff it properly; it needs a full-time person and should be a more accelerated course. It has to be done either on the chapter level, or with federal money."

In Chicago, the Black Architects Collaborative had a brief summer program with the Kenwood-Oakland Community Organization. The program processed only one group of 12, who received \$1.45 an hour while in the program, then a salary of \$2.25 to \$2.75 negotiated for them with employers. "We weren't hung up on architecture," says Andrew Heard, only black board member in the Chicago chapter, "but wanted to give them a sense of confidence in themselves, and a sense that they can have an effect on what happens in their community." The program had \$500 from the Chicago chapter of the AIA, and "bits and pieces" from architectural firms. The money dried up, says Heard, after the financial disaster of the 1969 AIA convention in Chicago.

Another program began hopefully in Wisconsin during the summer of '68, at the suggestion of William P. Wenzler, an architect of Brookfield, Wisc. It was not training so much as exposure for ten 14-year-olds who spent mornings in local offices—two hours working at "small jobs" and two hours learning directly from the architects.

By 1969, Wenzler's was the only office to take a high school student, and for reasons best known to the youngster he didn't last the summer. Wenzler says, "You have to understand something like that." The sum-

mer of '69 saw a shift in emphasis; chapter members gave jobs to seven students from the fourth year of architecture at Hampton Institute. This summer there is no organized activity. "Work is slow," says Wenzler, "but that shouldn't be an excuse."

Some promising programs have yet to begin. In Chicago, the Uptown Design Center—run jointly by the Uptown Area People's Planning Coalition and the AIA—submitted a program in February to the Illinois State Employment Service. The red tape is "even more involved than we imagined," reports Howard Ellegant. Two stumbling blocks remain: after approval by the State Department of Vocational Education, the program must go out for competitive bids unless VocEd accepts an ISES proposal that the program be run as an experimental one; and in order to receive state funds, the Uptown Center—or the AIA—must be certified a Vocational Training Facility by the State Superintendent of Public Instruction.

The Uptown program would run 50 weeks, 40 hours a week—1,000 hours of drafting, specifications and estimating; 500 hours of graphic arts, model-making and reproduction; and 500 hours of administration and information. The three R's will also be taught, in such a way as to be relevant to other work. Fifteen trainees (to begin with) will work on projects in their own area—the uniquely diverse Uptown with its population of red, black, white, brown and yellow.

In New York City, the AIA chapter has just agreed to join with six engineering societies in their JUMP, or Joint Urban Manpower Program, to request MA-5 funding from the Labor Department. (Boston Architectural Center's new program is also an MA-5.) The New York program will be nine months long—16 weeks of outside training (one day a week in the hiring office), followed by full-time employment treated as on-the-job training. Students will get \$80 a week; offices will be reimbursed \$42.50.

Not a matter of money

Some insist that special funding is not needed. Leon Bridges, one of four black architects in the state of Washington and a principal in the Seattle firm of

Bridges/Burke, says it is "a myth that a trainee doesn't earn his way; he is very quickly productive." His firm gave one office boy \$1.60 an hour plus the Urban League's dollar. They took on a second trainee at the same time and will have a third when the first leaves to study architecture at the University of Washington. Any office can swing it, says Bridges, if it has roughly a 15:1 ratio of gross income (in \$1,000s) to the number of persons employed.

The Ballinger Company, in Philadelphia, because of its size and the kind of work it does (simple industrial buildings), finds it can always use one or two beginners. The training is not formal, just putting people to work on simple tasks—tracing and copying to start. The cost of training is minimal, says Louis de Moll, a partner, "and it comes back to us in the long run because we have several men who are topnotch draftsmen who grew by this route." The best learning situation, says de Moll, is where the trainee feels he is "contributing at least something."

The community design/development centers can be valuable as recruiting agencies. Gus Baxter of the Architects Workshop in Philadelphia has placed five young people in local architects' offices; three are already looking into architectural education—"Penn State, Drexel, maybe even Penn."

Seven black schools

Of an estimated 1,000 architecture students who are black (about 4 per cent of the nation's total), 600 to 700 are in seven predominantly black schools.

Of the seven, only Howard has an accredited school of architecture. The other two private schools (Hampton Institute in Virginia and Tuskegee Institute in Alabama) are about to receive accreditation. Only one of the four public schools, Southern University in Baton Rouge, La., is near official recognition. Two others, North Carolina A & T State University and Tennessee A & I State University, are special cases—the prospect of developing their departments of architectural engineering into full architectural schools is complicated by the fact that a totally new architectural school was recently created elsewhere in each state. Dealing with state legisla-

tors and board of higher education there will not be easy.

But at the seventh school—Prairie View A & M College in Prairie View, Texas—a surprising success story is in the making. A visit to Houston by Hugh Zimmers of the AIA Task Force sparked an interaction between Prairie View and the Texas Society of Architects that is literally giving the school a new lease on life. The president of Prairie View, Dr. Alvin Thomas, was ready to drop the department of architectural engineering, feeling that its existence only drained resources from other, more promising departments. But with outside interest and support, he is now hoping to build the department into an accredited school of architecture. The Texas Society of Architects has voted \$5,000 toward a \$20,000 study of the school (its board of directors voting unanimously), and Elliott Carroll, Deputy Executive Vice President of the AIA, has promised the first \$5,000 of Task Force funds. Texas architects are also hoping to improve the school at Arlington (part of the University of Texas system), which has 350 students and five faculty members, and are looking into the possibility of establishing a school of architecture at Pan American College in Edinburg, where the students are primarily Mexican-American.

Douglas E. Steinman Jr., president of the Texas Society of Architects, admits he had "enormous doubts" about the action on Prairie View, until Dr. Thomas told him, "The black students just do not go to the white architectural schools—there are fewer than 20 in the six Texas schools—and if they go, they don't do well." Upgrading the black schools is therefore not the old "separate but equal" approach that still motivates the white segregationist.

And in fact, Grady Poulard, the young black man who is the new Director of Community Services at the AIA, speaks of desegregation in reverse: "Let's make these schools as good as the white schools and have the white students come here." (In some real ways, Zimmers feels, the black schools are far ahead of the big-name schools—"they are very loose, are involved in the community, and have a lot of interdisciplinary activity.")

Another who believes that up-

grading the black schools needs no apology is Nancy L. Lane, director of the National Urban League's "BEEP"—Black Executive Exchange Program. If the overall level in the black schools were higher, she believes, integration would be easier. Thus in BEEP, black people from industry and the professions become a "floating" volunteer faculty to aid these schools.

BEEP was operating for a year and a half before it expanded into architecture, at Southern University, this spring (and got Ford Foundation money for the administration of the entire program).

Anchorman for the architects' course has been Robert J. Nash, who heads his own firm in Washington, D.C., and is a member of the AIA Task Force (and up for one of the Vice Presidencies of the national AIA this month). Nash mentions the very relaxed atmosphere at Southern; "the students aren't afraid to expose themselves, because the faculty makes them feel so comfortable." Visiting architects—a different one each week—have been enthusiastic; all report that they got more out of the two days than the students did. "They drained me dry, even went to the airport with me," says one. Nash is particularly excited that BEEP deals with the problem of content, not just numbers.

The seven become COBAS

Until this past year, the seven black schools had little contact with each other. Most of them are not members of ACSA (Association of Collegiate Schools of Architecture) and have enough difficulty just surviving, without spending additional money commiserating about mutual problems.

COBAS, the Council of Black Architectural Schools, came into being last December, with the main impetus coming from the ACSA's N.E. Region Committee for the Education of Minority Students (the only such committee in the ASCA). Sanford R. Greenfield, chairman of the committee, explains that they were looking to the black schools as a way to get more black students, but found no one who could speak authoritatively for the schools. Funds from nine ACSA schools brought their representatives to Washington for a meeting. A second meet-

ing of COBAS was funded by the AIA's Task Force.

"Although the immediate concern is accreditation," says Gary Bowden of Hampton, head of COBAS, "there are quite a few things we can do as a collaborative group"—tap video-tape resources, discuss methods of recruiting, set up a cooperative center for research and graduate studies, find ways to meet the special needs of these primarily rural student bodies.

Money is desperately needed. The \$20,000 for Prairie View will go only for planning (and finding a dean and faculty), not for the library, program, equipment, facilities and faculty that will fulfill the plan. COBAS will be looking to the AIA for money, hoping to get some 25 per cent of the Task Force funds. "But it's important who sits on the money," says Jerome Lindsey, executive secretary of COBAS. "We want COBAS to have 51 per cent control."

Integrating the white schools

The other side of the coin of improving the black schools is getting more black students into the predominantly white schools. Of the 85 or so schools of architecture, says Zimmers, probably half have no minority students.

According to Lindsey, "Money is no problem; the schools find it. But recruiting is. COBAS feels that if the white schools want graduate students, OK, but if they want to get undergraduates, by skimming the cream off the top of the black schools, we're against it." He believes, as many do, that a better information program is needed in the high schools to increase the total number of minority students studying architecture.

To this end Max Bond, (a black architect), had his first-year class at Columbia design a program to reach out to high schoolers. A year ago, his class devised a kit of materials and took it traveling; last fall the new first-year class had many more minority members. The student AIA organization is also aware of this problem; they will start a massive information program for minority students in the high schools this fall.

Every school has some kind of recruiting program, explains Greenfield, but mostly it's at the institutional level, not at the school of architecture. One of

the approaches the ACSA Committee believes valid is to get the schools to admit as many qualified minority students as can be found, then work out scholarship problems. Results are still slow, though. Charles Kahn, dean of the school at the University of Kansas, believes that outside scholarship funds can be stretched farther than they often are, by using the federal Educational Opportunity Grants available at every state school. He can put a student through school for \$1,150 a year (room and board, tuition, and the rest), with EOG funds making up the rest of the \$2,300.

A number of people at the schools are thinking about the kind of education a minority student receives once he gets into school; they wonder if perhaps a few major centers should be built up to deal especially with his problems and interests. An ACSA workshop this month, funded by HUD and the AIA, is looking into the subject.

As recently as July 1968, the AIA Board of Directors voted the minute sum of \$5,000 a year (for three years) for scholarships. The Institute is now involved in a \$1-million program (\$500,000 each from the AIA and the Ford Foundation over the next seven years) giving \$16,000 scholarships to 65 students—15 will enter this fall, 25 next year, and 25 the year after.

This year's 150 applicants were screened with difficulty. "We won't be able to take a lot of good people," says Grady Poulard, "but the generating effect is more important than the actual students we help." The schools will be asked to give a full scholarship to one other person, when they take this one.

A steering committee will not only pick the students, but also the schools, selecting those that will give the student a chance to work in the community as part of the curriculum, and will give him remedial work and counseling when necessary. The letter going out to potential applicants makes clear that "this is not a traditional kind of program which places primary emphasis on past academic achievement and 'cultural acceptability.'" Hugh Zimmers comments: "We want people who wouldn't get into the profession otherwise." The big defect so far, says

Zimmers, is that there are no southern applicants. Any "disadvantaged" person will be considered, although the program is particularly aimed at the imbalance of black and Spanish-speaking architects, and at creating architects committed to helping "other disadvantaged people."

Jerry Lindsey, the COBAS representative on the steering committee, has raised this question (without success): "Where should the recipients go—to Harvard which already has the money, or to the black schools which haven't a penny?" Lindsey thinks either the schools should pick the people or the money should go directly to the student to choose. "I'm concerned that the money not be wasted."

Two big "if's"

The AIA's Task Force on Professional Responsibility has had an active six months since it was funded. Two of its proposals are now being considered by the Ford Foundation—one for a drafting and college-preparation program similar to ARCH's, and another for a major funding of CDC's. On deck is a plan to analyze the architectural technician's courses now offered by more than 200 technical schools and junior colleges, hoping to open this training to more minority students.

Members of the Task Force have varied reactions. Robert Nash is "definitely encouraged. I'm not sure the AIA is moving to the position we want them to, but cracks are opening up." One of the two student members, Michael A. Interbartolo Jr., who is president of the Associated Student Chapters/AIA, says that the Task Force "hasn't had any major effect on the AIA because it doesn't reach the committees—they don't even know what the other committees are doing." To another observer, "the AIA is moving, but can't move any faster without an internal revolution."

Some negative opinion from architects has surfaced. Executive Vice President William L. Slayton says there have been "a couple of resignations." About 40 letters of opposition—and 20 of approval—came in after his Special Report to the membership last December outlined the first expenditures of \$145,000. Opposition within the Board of

Directors is reportedly at eight, out of 26.

More than a few people are concerned about what happens when Robert Hastings becomes president of the AIA in six months. At best, he is considered "a hard-nosed businessman," with—thus far—"a lack of exposure." The way in which Hastings responds, it is felt, depends to some extent on his first vice president, and on Slayton's strength—and strength of purpose.

As for its immediate future, the Task Force is assured of financial support through the end of this calendar year, and will probably continue for another year. Ultimately the Task Force will be dissolved, "as each committee takes over some part of the job," says Carroll; "but some might think the task is accomplished sooner than others."

One prominent architect, whose firm has recently been active in opening up minority opportunities, thinks that the results everywhere are only tokenism. The situation isn't changing, he says—"because the leadership of the profession is essentially conservative and deathly afraid of its clients."

And indeed, one national officer of the AIA reveals a prevalent attitude when he evaluates the entire program as "not just a moral issue but a practical one"—he hopes the new minority people in architecture will return to their own communities to work, "not go into Whitey's areas." Many black professionals will undoubtedly want to work in their own community, seeing the white man's architecture as the creation of showpieces for people who have too much money. Yet one black architect says, "a black architect just can't swing it only in his own community." And more than one black architect must feel as this one did: "There may be more of us around, but you don't see any of us getting the \$60-million jobs." (The AIA urges white firms to link up with black ones, to help get some of the bigger jobs, but as George Rockrise, chairman of the Task Force, points out, this cuts two ways with white firms occasionally "horning in" on big ghetto jobs.)

Whether there will be significantly more minority architects in another 10 years is thus only part of the question. But the

numbers game is by no means won. For the New York chapter, the struggle goes back to 1950 (a loose committee formed in that year became the Council for the Advancement of the Negro in Architecture in 1953, and the chapter's Equal Opportunities Committee in 1963). Yet 20 years of "appeals to conscience," speakers at high schools, distribution of scholarship money, and exhibits of work by minority architects has produced only 17 black chapter members—one per cent of the membership. And as Isaiah Ehrlich and Marcus Caines mention in a recent report, this period saw New York's Cooper Union discontinue its evening courses in architecture thus cutting off a major route into the profession for those who must work during the daytime.

The future of the whole effort seems to rest on two big "if's." One is economic. The AIA's campaign for \$15 million could be either the end or the beginning. That sum in itself is not certain of attainment (some disagree that it is an actual goal) although many are hopeful. Rockrise says, "The profession must reach out to other people for the money; the AIA is notorious for talking to itself." Zimmers says, "If the government feels strongly about the environmental professions, the way they did about the medical, they've got to begin coughing up the money." The economic situation for architects is of course crucial—in a pinch, the profession might easily see equal opportunity as an expendable luxury.

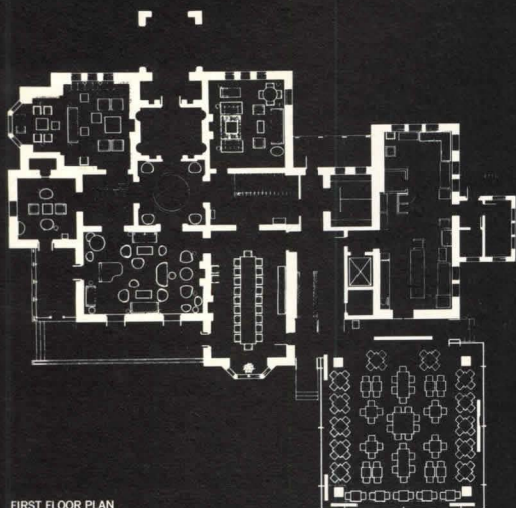
The other "if" concerns commitment. Slayton's Special Report in December 1969 included the phrase "if you believe that equal opportunity within the profession is a desirable goal." That question is probably not answered with overwhelming enthusiasm by the architects in any section of the country.

Whitney Young's message to the AIA in 1968 is still appropriate. He spoke of the Greek concept of justice as a condition where "those who are not injured are as indignant as those who are." Despite some hopeful signs in the past year or two, equal opportunity for minority persons in architecture may not be realized for many years. Not until the uninjured majority becomes sufficiently indignant.

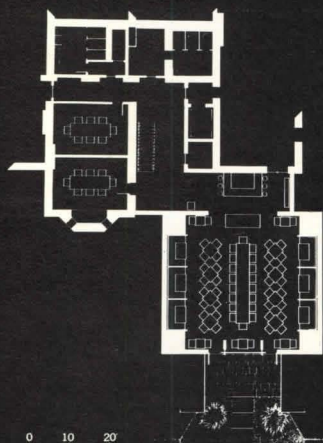
—ELLEN PERRY BERKELEY



PRINCETON'S GLASS PAVILION



FIRST FLOOR PLAN



LOWER LEVEL

Entrance to the new Garden Wing is through the original mansion (left) into a central hallway (right) surrounded by reception, library and formal dining areas (plan, top). The lower floor (plan, bottom) has only one exposure.



For almost a century, the presidents of Princeton University had official residence in the secluded splendor of Prospect, an Italianate villa designed in 1849 by John Notman, who had earlier introduced the style to the U.S.

Two years ago, the tradition of presidents ended. President Goheen moved into off-campus quarters and, with the aid of a no-strings-attached anonymous gift, Prospect was converted into

Princeton University's first faculty center.

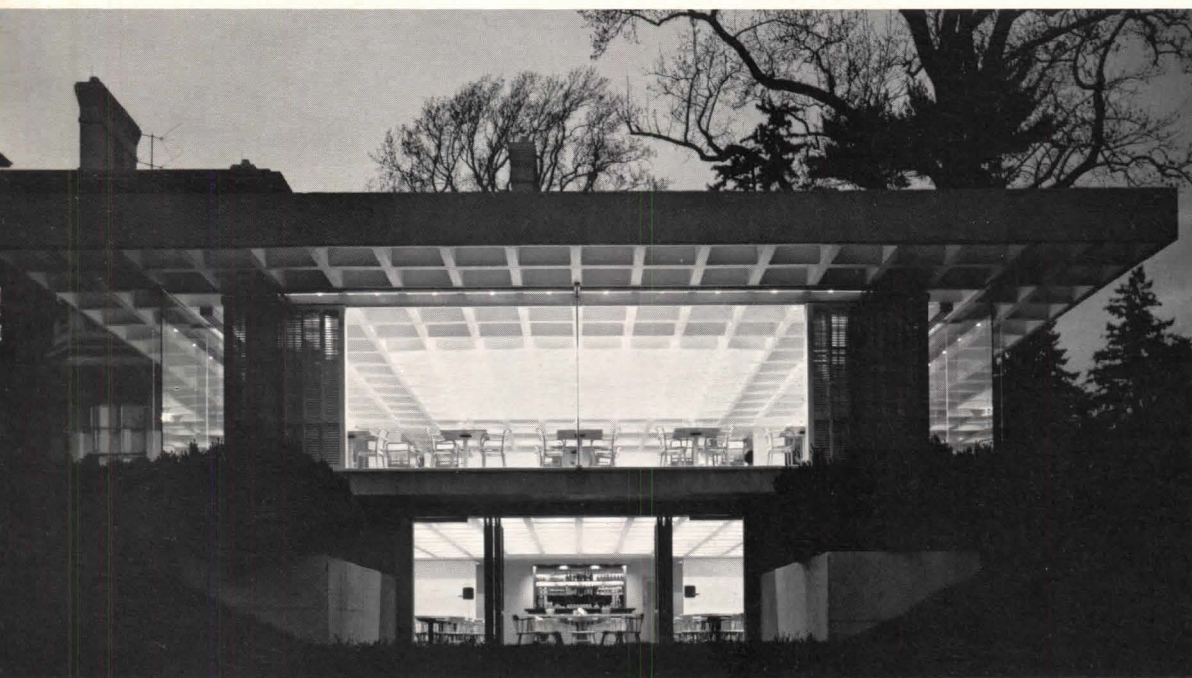
The conversion is a happy one. The new Prospect Center effectively combines a chastened version of the original mansion with a contemporary glass and concrete addition that complements, but in no way imitates, the old. Warren Platner was architect. Pietro Belluschi, Princeton's architectural consultant, and C. Harrison Hill, university

architect, collaborated.

Platner, who had to work to an institutional budget, kept the conversion simple and direct. He resisted contemporary imitations of earlier splendor and, instead, removed extraneous embellishments to the original architecture. He replaced miscellaneous wall coverings and unified the interior spaces with luminous white paint. White shutters replaced heavy draperies. Floors that had

been stained black were restored to their original white oak freshness. Paintings reclaimed from Princeton's storage vaults combine with sculptured architectural detailing to give warmth and character to the rooms.

Few period furnishings were left behind, so Platner used mostly modern furnishings of his own design. Most of the downstairs sitting areas have light carpeting and round metal and fab-



The upper floor of the new wing, called the Garden Room, is enclosed by glass on three sides for a light blend of indoor and outdoor effects. The more intimate lower floor is furnished more casually and has a warm, pub atmosphere. The waffle slab roof is cut open to the sky at the perimeter (right) for a garden trellis effect.

ric chairs and tables. The materials are lush and colors usually warm and bright. The library forsakes elegance for a more casual, masculine atmosphere. Here the furniture is massive and square and the materials are wood and warm, brown leather. Fur rugs and pillows and stacks of assorted paperback books add to the informal effect. Upstairs, the rooms are mostly conference areas with simple, functional

furnishings that the university may eventually replace.

The most striking symbol of Prospect's new role is the two-level restaurant addition to the rear of the building, overlooking formal gardens. (Prospect is in the center of the campus, but has its own grounds and gardens, surrounded by dense trees at the perimeter.)

Both the materials and the form of the addition carefully

maintain the structural integrity of the original mansion. The pavilion is simple and its form uncomplicated and square. It adds a new, but harmonious horizontal to the mansion's exterior, using many of the same materials, but in a modern idiom.

The walls of the Garden Wing, as it is called, are entirely of glass, including the mullions, which project outward at right angles to the wall. (Platner used

a similar wall system experimentally in the Georg Jensen Design Center, in New York City.) The effect is almost crystalline and at dusk the pavilion is unusually striking, with the many reflective surfaces creating unusual light patterns. Exposed filament lights arranged on the interior ceilings accent the jeweled effect.

The walls of the pavilion are protected by the overhanging cornices of a pan-formed, waffle-



slab concrete roof, perforated to the sky at the perimeter. The underside of the ceilings has a deep waffle pattern that seems consistent with the sculptured patterns of the original cornices and the interior ceilings of the villa. This consistency is also maintained by painting the concrete undersides white and using white oak for perimeter flooring.

The two levels of the pavilion are quite different in interior

mood. The upper portion is more formal and bright and seemingly sets right over the gardens. Warm wood shutters may be used to enclose the space entirely or in part, creating a more sedate, paneled effect, but generally the room is light, airy and unpretentious. The furniture furthers the illusion. It is also light and natural colors dominate. Chairs are of Czechoslovak bent-wood design.

The lower level, with glass only on one side, is more intimate and casual. There is a bar on one end and rows of wooden booths tucked into leather-covered pockets along the walls.

Platner was most delighted to hear from the university that many people, entering the new wing from the old, were unaware of the transition, one seemed so in keeping with the other. —MARGUERITE VILLECCO

FACTS AND FIGURES

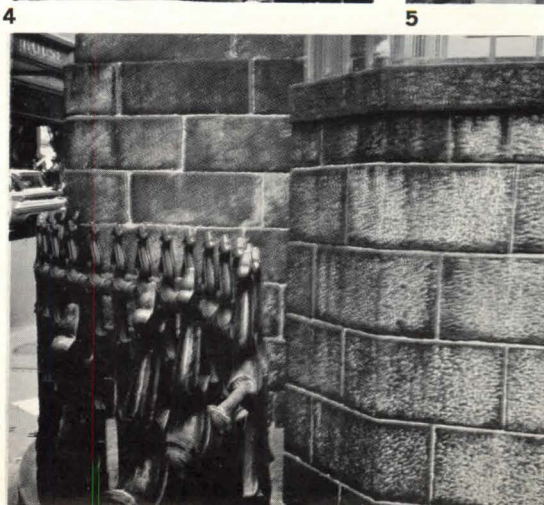
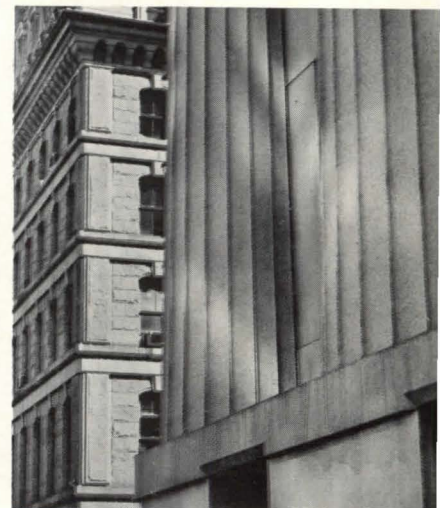
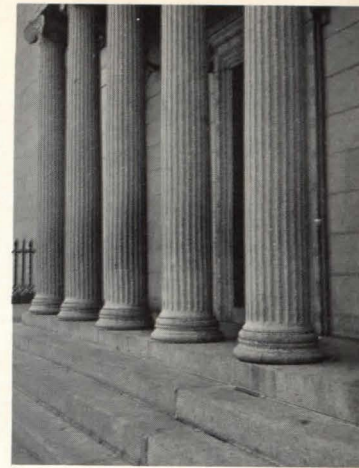
Prospect Center, Princeton University, Princeton, N.J. Architects: Pietro Bel-luschi, consulting architect; Warren Platner, associate architect; C. Harrison Hill, university architect; Robert Brauer, Frank Emery, Lee Ahlstrom, associates of Warren Platner. Engineers: Seelye, Stevenson, Value & Knecht (structural); Meyer, Strong & Jones (mechanical and electrical). Landscape architect: Michael Rapu-ano. General contractor: Matthews Construction Co. Area: 9,000 sq. ft. (new); 15,000 sq. ft. (renovated). PHOTOGRAPHS: © Ezra Stoller (ESTO).



BOSTON GRANITE

The one texture that belongs peculiarly to Boston—setting it apart from other East Coast cities—is the texture of granite. This hardest and most durable of all building stones was part of the natural landscape around Massachusetts Bay, in cliffs along the sea and in boulders strewn across the fields. Within a century after Boston was founded, settlers had found seams of granite from which they could quarry the large, sound slabs required for cut-stone buildings. Granite from nearby Quincy made its first Boston appearance in 1749 in King's Chapel, whose walls look as tough as ever today. "Granite imposed rigid restrictions on detailing," observes Henry-Russell Hitchcock, writing of Boston buildings of the Federal and Greek Revival styles (in *Architecture: 19th & 20th Centuries*); but Boston builders "knew how to make of those restrictions an opportunity for developing a highly original sort of basic classicism such as even the most determined European rationalists rarely approached." In many mid-century structures this classicism became so elementary as to lose all vestiges of traditional ornament. Later, H. H. Richardson and his followers combined rock face granite with other types of stone in their picturesque building masses. Toward the end of the century, McKim, Mead & White introduced the Renaissance Revival, in an austere, characteristically Bostonian form that owed much to its sharply cut, lasting details in granite.

Quincy granite was used for Boston's most ambitious landmarks of the Federal and Greek Revival styles: the Bunker Hill Monument 1 (1825-1843), designed by Solomon Willard, and its porticoed outbuilding 2, with simplified Ionic details; the Quincy Market 3 with its massive end porticos of rudimentary Tuscan style (left), designed by Alexander Parris and completed in 1826; the State Street Block 4 (1858), designed by G. J. F. Bryant, faces the giant Doric columns of the Custom House 5 (1837-1847) by Ammi B. Young. Boston's first granite walls, those of King's Chapel 6, were constructed of Quincy Granite in 1749. All photographs by Clemens Kalischer.



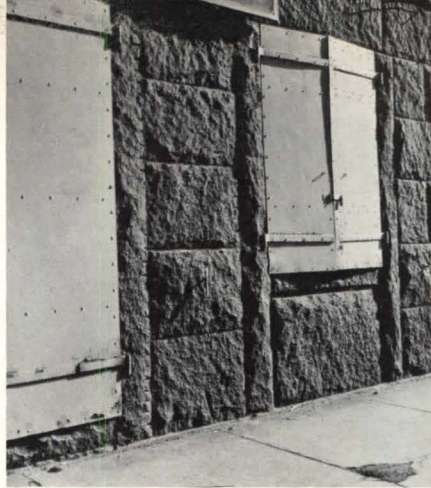


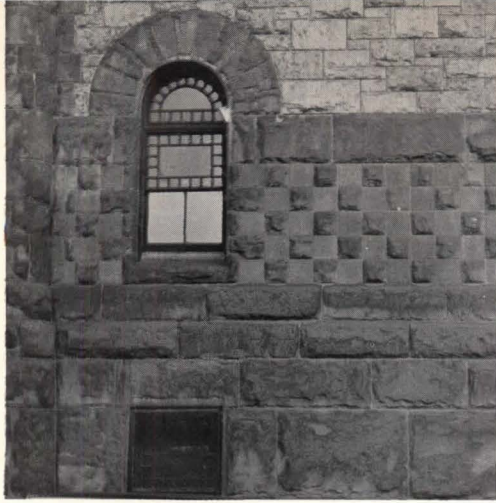
RICHARDS CO.

G. G.



Granite appeared in its most logical applications in the mid-19th-century structures along the Boston waterfront. In warehouses on Commercial Wharf (left), dating from the 1850s, the granite wall is reduced to its essentials of rock face block, finely cut lintels, and belt courses. In a similar structure on nearby Commercial Street 3, lintels are less conspicuous and quoins are added (not necessarily at corners). On the lower floors of Commercial Wharf structures 1, 2, monolithic granite piers support lintels in a way that approximates the unique "granite skeleton" construction of Alexander Parris's commercial buildings along North Market Street 4, which date from the 1820s. Some public works construction in Boston, such as the stairs in the park on Copp's Hill 5, displays handsome, utilitarian applications of granite.





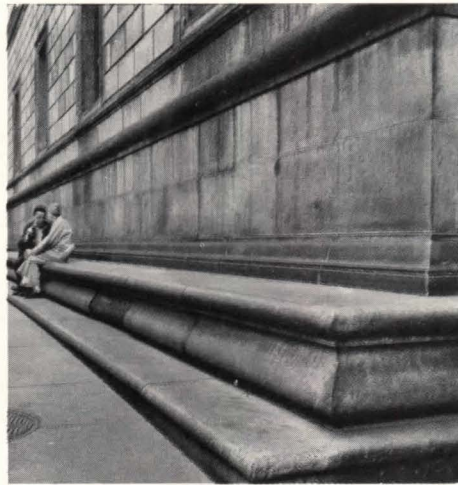
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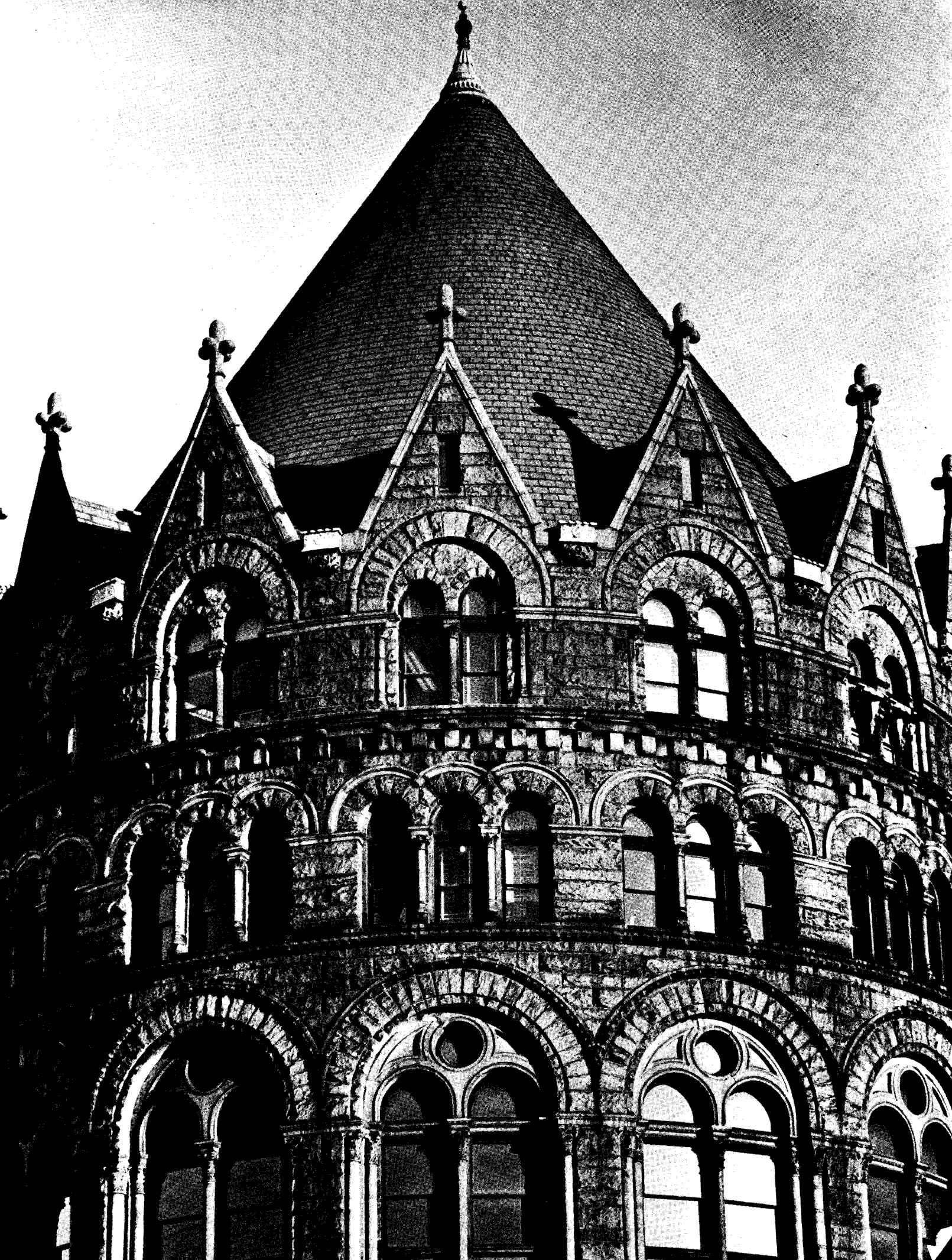


6



7

Unaccustomed combinations of granite with other materials, introduced by H. H. Richardson in the 1870s, can be seen in many Back Bay buildings, such as the Exeter Theater (originally the First Spiritual Temple) 1, 2. Richardson's own Trinity Church, which set the pattern, stands nearby; its parish house stair 5, 6 illustrates his use of reddish Longmeadow sandstone as trim for pinkish Milford granite walls—both much more vivid in color than they appear today. The more sedate, monochromatic approach of Richardson's later years is shown in two handsome office buildings by his successors, Shepley, Rutan & Coolidge—the Ames Building (1889) 3 and the Grain Exchange (1891), facing page. Classical Revival work in granite appeared both before the Richardsonian phase, as in the Suffolk County Jail (1851) by G. J. F. Bryant 7, and after it, as in the Boston Public Library (1888-1892) 4, the first of McKim, Mead & White's many public buildings.



FORUM

(continued from page 23)

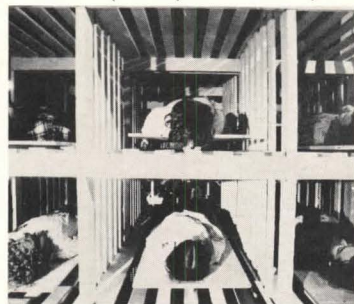
an economy which is not contingent upon continual population growth nor increasing consumption, for stability; and encouragement of architects themselves to undertake a personal commitment to rear no more than two children.

ARTS

FROM TOSSED SALAD . . .

St. Louisans helped celebrate their New Music Circle's tenth anniversary with a festival that included an environmental show called Sensorium, the creation of Architects H. Stewart Thompson and John Newman.

In one part of the show, participants were rolled on wooden pallets into chicken-coop compartments and "stored" one atop another (below). There they re-



sponded in their own ways to piped-in audio-visual stimuli. For many it was a grim reenactment of Hitlerian genocide. For others, perhaps, a prophecy (not unlike Isaac Asimov's, see story above) of life in the year 2500. In any case, the cell-mates had fun later walking barefoot through tossed green salad with oil and vinegar dressing.

. . . TO VANILLA ICE CREAM

The three-member Austrian design group, Haus-Rucker-Co., whose environmental show "LIVE!" opened last month at New York City's Museum of Contemporary Crafts, see the future as anything but grim. In fact, "the future, as we see it," they say, "is bright yellow. Like vanilla ice cream." Well, perhaps ice cream is yellow in Vienna.

The three—Laurids Ortner, Gunter Kelp, and Klaus Pinter, and their co-workers—got the city to close down one block of 53rd Street so they could inflate a giant "mattress" in the street for their guests to jump about on (top) and bounce huge plastic spheres on. The invitation was,



in fact, to "come over to our house and play."

Two of the three team members lived in the museum during the show, inviting guests to have a cup of coffee and rap a while. There was another mattress inside that covered the entire L-shaped ground floor. Upstairs, and past one of the host's beds, was a curved-chaise contrivance (below) on which couples lay



and tested their virility-seductivity quotient, which registered on corresponding plastic figures overhead. Possible scores ranged from HMMM to TILT.

URBAN THERAPY

Boston Artists Project 1970, begun last fall by the Institute of Contemporary Art to "make Boston aware of its artists' community as a valuable asset," is accomplishing that, and the reverse as well. It has opened up a wide-scale action-dialogue between city and private agencies, business and industry, politicians, school children, design professionals, and just about everybody else.

Over a thousand Boston artists and architects were invited to propose a project they would

like to do for the city, or to participate in projects proposed by over 200 city and private agencies and neighborhood groups.

Once artist/architect and project/group are joined, the next step is to interest city agencies, the business community, and private individuals in sponsoring the proposed amenity. Proposals include such things as a people's park; play equipment for a day-care center; a 130-ft. mural for a



girls' detention center; a portable-inflatable playground; silk-screen prints for billboards; and a "Paint Your Door Saturday" program, in which anyone in the city can go down to his local Little City Hall for a brush and a quart of paint.

Mobil Oil, the Hotel Corporation of America, Boston Gas Co., and two realty companies have agreed to finance projects. To help other public-spirited donors make up their minds, an exhibition of 100 of the best proposals in models, drawings, slide sequences, and photographs will be held in the Boston City Hall from June 5 through June 12. The project (above) by Artist Dorothy Proctor and suggested by the commissioner of parks is for people to sit on and not—if they are alone—feel lonely.

WINNERS

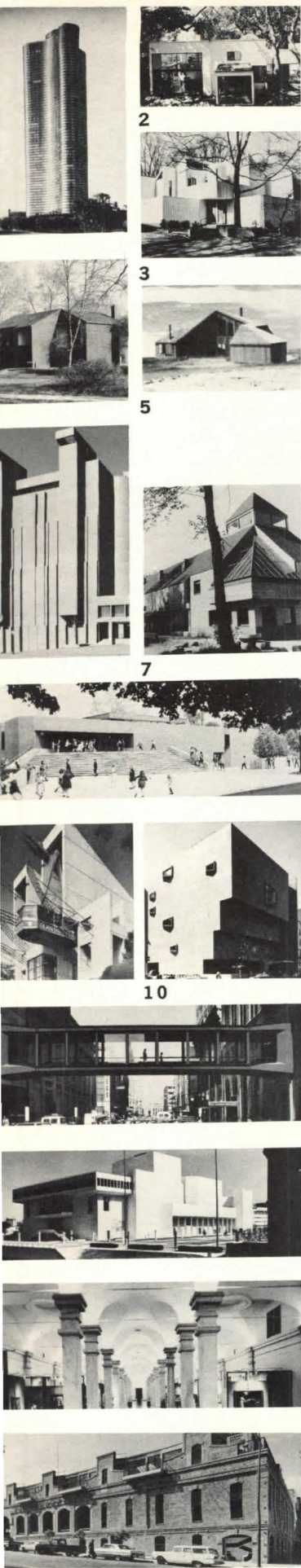
BEST IN THE U.S.

The AIA Honor Awards, the nation's highest professional recognition of architectural excellence, were announced last month. Some comments by the jury follow:

"The presence of four single family residences in this select company of award winners might cause concern to those who consider them a socially irrelevant building type in today's world.

... Taken collectively, they are a healthy antidote for an overdose of ill-sited, unrelated, and inhuman buildings."

"Following the precedent set



last year, each of the buildings was visited by at least one of the jurors. . . . That this was no mere formality is evidenced by the fact that a full 30 per cent of the preliminary group selected for awards failed to measure up to this final review for various reasons that were not readily apparent in the submitted photographs and plans."

The winners are:

1. Lake Point Tower, Chicago, Ill.; Schipporeit-Heinrich, Inc., architects, Graham, Anderson, Probst & White, associated architects.
2. Herman D. Ruth House, Berkeley, Calif.; Donald E. Olsen, architect.
3. Phillips/Brewer House, Chevy Chase, Md.; Hartman-Cox, architects.
4. Don M. Hisaka House, Shaker Heights, Ohio; Don M. Hisaka, architect.
5. W. J. Milligan Vacation House, Sea Ranch, Calif.; McCue, Boone, Tom-sick, architects.
6. Bradfield and Emerson Halls, Cornell University; Ulrich Franzen, architect.
7. Bancroft Elementary School, Andover, Mass.; William D. Warner, architect.
8. Lincoln Elementary School, Columbus, Ind.; Gunnar Birkerts & Associates, architects.
9. Squaw Valley Cable Car Terminal, Olympic Valley, Calif.; Shepley, Bulfinch, Richardson & Abbott, architects.
10. The Whitney Museum of American Art, New York City; Marcel Breuer & Hamilton Smith, architects.
11. Pedestrian Skyways, Minneapolis, Minn.; The Cerny Associates, Inc., architects.
12. Milwaukee Center for the Performing Arts, Harry Weese & Associates, architects.
13. National Collection of Fine Arts and National Portrait Gallery of the Smithsonian Institute, Washington, D.C.; preservation and restoration; Faulkner, Stenhouse, Fryer & Faulkner, architects; Victor Proetz, Bayard Underwood, design consultants.
14. The Cannery, San Francisco, Calif.; preservation and renovation; Joseph Esherick & Associates, architects.

CRITICS CHOICE

Ada Louise Huxtable (at top) received the first Pulitzer Prize for distinguished criticism last month. Mrs. Huxtable became architecture critic for the *New York Times* in 1963 after several years as a freelance contributor to the *Times*.

From 1946 to 1950 she was assistant curator of architecture at the Museum of Modern Art in New York City. A graduate of Hunter College in New York, she has done graduate work in architectural history at NYU's Institute of Fine Arts, studied contemporary Italian architecture and design as a Fulbright scholar, and design and technique in American architecture



as a Guggenheim fellow. She has written two books—*Pier Luigi Nervi*, George Braziller Inc., and *Classical New York*, Doubleday—and contributed to many professional journals ("Building the Soviet Society," Nov. '67 issue).

EXHIBITS

A CENTURY AT THE MET

The Metropolitan Museum of Art in New York City is observing its centennial year with a series of controversial facelifting and expansion projects (see page 42). Almost universally well received, by contrast, are a series of major exhibitions mounted by the museum on a scale worthy of its longevity. One of these opened last month. It celebrates a century of building in this country (1815-1915) that marked the "Rise of an American Architecture."

The exhibition, conceived and directed by Edgar Kaufmann Jr., will remain on view at the Met until October 4 and then travel cross-country. The installation, designed by Architect James Stewart Polshek and Graphic Designer Arnold Saks, consists of architectural fragments and black-and-white and color photographs set into large, elevated, modular light boxes (below), for easy portability.

The show concentrates on three major areas where Americans have made a unique con-

tribution: commercial buildings, modest single-family houses, and city parks. And the exhibition's theme point is well made with surprisingly few examples.

The commercial buildings represented are the Arcade in Providence, R.I., by Warren and Buchlin; the Auditorium building in Chicago, by Adler and Sullivan; and the Flatiron building in New York City, by Daniel H. Burnham.

The simply ornamented, wood-frame houses, built on the precepts of the Hudson River architect, Andrew Jackson Downing, are bracketed with H. H. Richardson's Reverend Percy Browne house in Marion, Mass.—a small, shingled gem—and four of Frank Lloyd Wright's prairie houses.

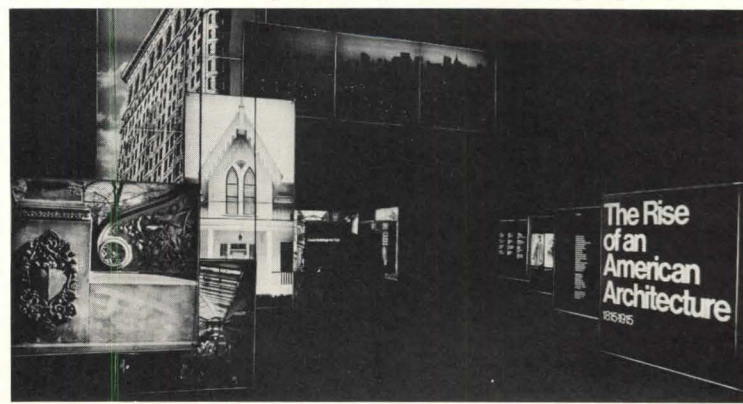
The mid-19th-century Southern urbanity of Savannah's city squares, planned a century before by General James E. Oglethorpe, are joined by Fredrick Law Olmsted and Calvert Vaux's Central and Prospect Parks in New York City, and the Chicago lake front parks, planned by Olmsted, Burnham, and others.

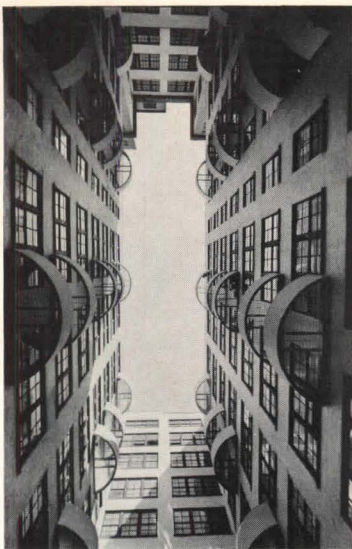
A brief film sequence, produced by Cinemakers Inc., caps it all off with a swift montage of jump-cut frames that tragically expresses the vigor with which many of our irreplaceable landmarks are being destroyed.

REBIRTHS

ONE OF A KIND

Westbeth, a complex of buildings near the Hudson docks in Manhattan's West Village, was formerly a Bell Telephone laboratory and is now "the largest living and working community for artists in the world." The transformation, carried out under the FHA's 221d3 middle-income housing program, is due





in great part to the interim sponsorship of the National Council on the Arts and the J. M. Kaplan Fund, the former contributing \$750,000 seed money, the latter, over \$1 million.

Last month, the artists shared Westbeth with the public for two weeks. They exhibited their work in the central courtyard (above), presented concerts, and held open house in their apartment-studios. These last range from 700-sq.-ft. "efficiencies" at \$110 to 1,500-sq.-ft. duplexes at \$190. Except for kitchens and baths, the spaces were left by Architect Richard Meier for the artists to subdivide as they saw fit. Still to become operable are some of the areas for commercial and community facilities.

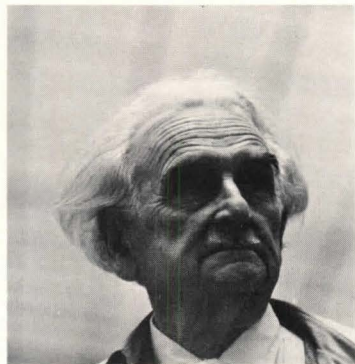
Westbeth is not likely to be duplicated anywhere outside New York. That the feds were willing to bend some of their regulations to accommodate this unique need is, nonetheless, a hopeful sign.

PEOPLE

PIONEERING ARCHITECTS

One day, several years ago, we were visiting Charles and Ray Eames, who were then living in a really spectacular terraced apartment building in Los Angeles. It was one of those stepped-down jobs on a hillside, with patios and verandas at different levels. It was a building designed and constructed in the 1920s by Richard Neutra, and it has served as a prototype since then, for similar terraced housing all over the world. Charles and Ray Eames, who are no architectural slouches in their

own rights, were ecstatic about living in this apartment that was then more than 20 years old. To them, Richard Neutra's work—especially his early work in Southern California, in the 1920s—seemed more significant than almost anything else that had been built in this country, in that decade and in subsequent ones.



Richard Neutra died on one of his One-World trips, in Wuppertal, Germany, on April 16th. He was 78. The history books will place him in perspective, and the perspective may be adjusted, upward, in the years to come. For what Neutra did, in Southern California, in the 1920s, completely changed the face of architecture in that state, and his radical vision touched the rest of this country and the rest of the globe. The reason it did was really quite simple: Neutra never compromised—he built the way he thought people should build in this century; and when his clients refused to go along, he starved. (Is anybody listening?) He was a very principled architect, and a very great one. We will always be glad to have known him.

Last month was a bad month for architecture in other ways as well. When UAW President Walter Reuther's plane crashed on May 9th, in northern Lower Michigan, one of that really exciting labor leader's companions was his old friend, Oskar Stonorov. Stonorov, who was 65, may



have been one of the most under-appreciated architects of his time: inexplicably, his name does not even appear in that allegedly authoritative *Encyclopedia of Modern Architecture*. Yet there were few architects in recent years whose influence was as significant as his: he built some of the best public housing still to be found anywhere in the U.S., and he built it in the 1930s and 1940s, when that really took some doing; he was perhaps the strongest single force for better planning in Philadelphia, enthusiastically backing up his friend Ed Bacon when that still took a lot of courage and vision; he was Louis Kahn's partner before anyone else recognized Kahn's genius, and he later went into partnership with George Howe as well; he organized and designed the great Frank Lloyd Wright exhibition originally shown at the Palazzo Strozzi in Florence in 1951; and he was one of the earliest admirers, chroniclers and supporters of Le Corbusier in this country. His own work, apart from housing, included office buildings, schools, community centers, furniture and sculpture. He was really too busy to make himself very famous, but those who knew him knew and learned from his strengths, his enthusiasms, and his extraordinary talents.



In some ways, Roland Wank, who died on April 22nd at the age of 71, was even less well known than Oskar Stonorov; yet his monument is larger and in many ways more impressive than that of any other architect of his era. For Wank was of course, the principal architect of the Tennessee Valley Authority during TVA's formative years. An article on Roland Wank's work and its significance will appear in a forthcoming issue.

PHOTOGRAPHS: Page 21 (top), Norman McGrath; (bottom), *The New York Times*; page 22 (center), *St. Louis Post-Dispatch*; page 23, George Cserna; page 70 (center bottom), Schmitz-Fabri; page 71—AIA awards: 1, Hedrich-Blessing; 2, Rondal Partridge; 3, W. and S. Cox; 4, Thom Abel; 5, Jeremiah O. Bragstad; 6, George Cserna; 7, Becky Young; 8, Orlando R. Cabanban; 9, Julius Shulman; 10, © Ezra Stoller ESTO; 11, Robert Jacobson; 12, Balthazar Korab; 13, Norman McGrath; 14, Ernest Braun; page 72 (left), Ann Douglass.


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Easier to apply than paint.
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Kawneer introduces a new system of aluminum entrance coordinates ... Entara

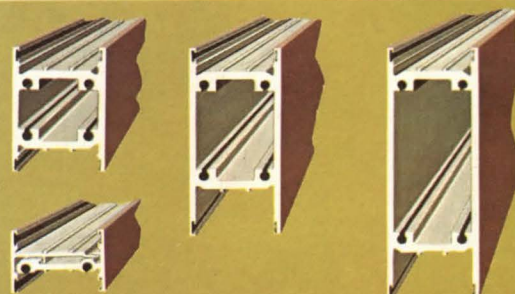


Now you can design entrance areas as individual and memorable as your buildings.

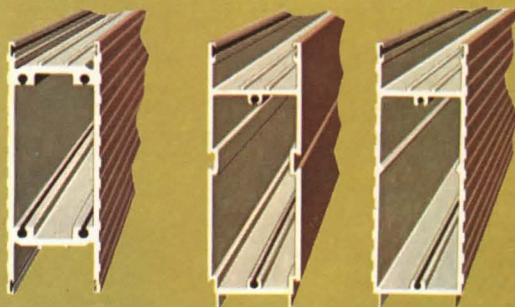
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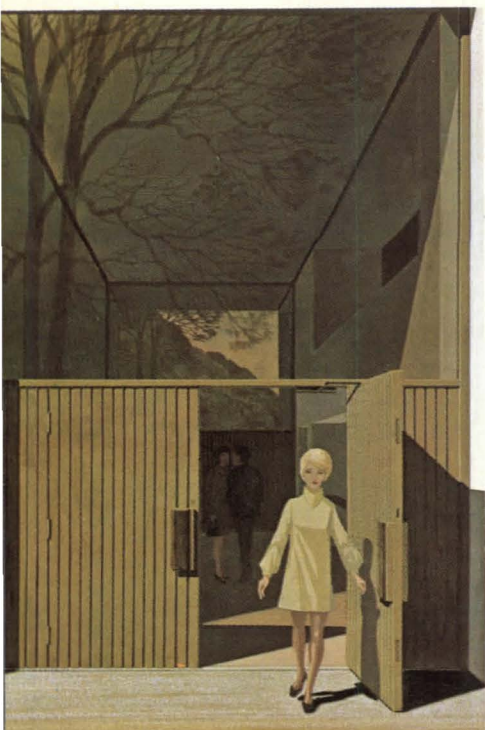
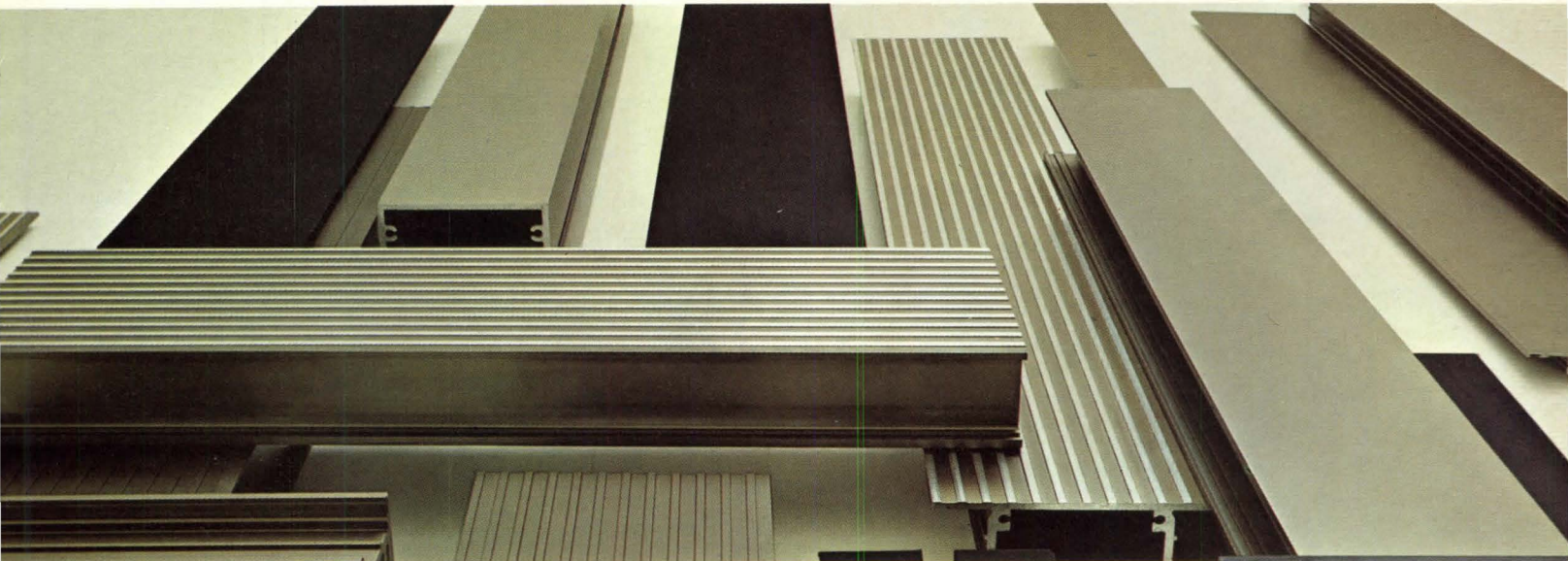
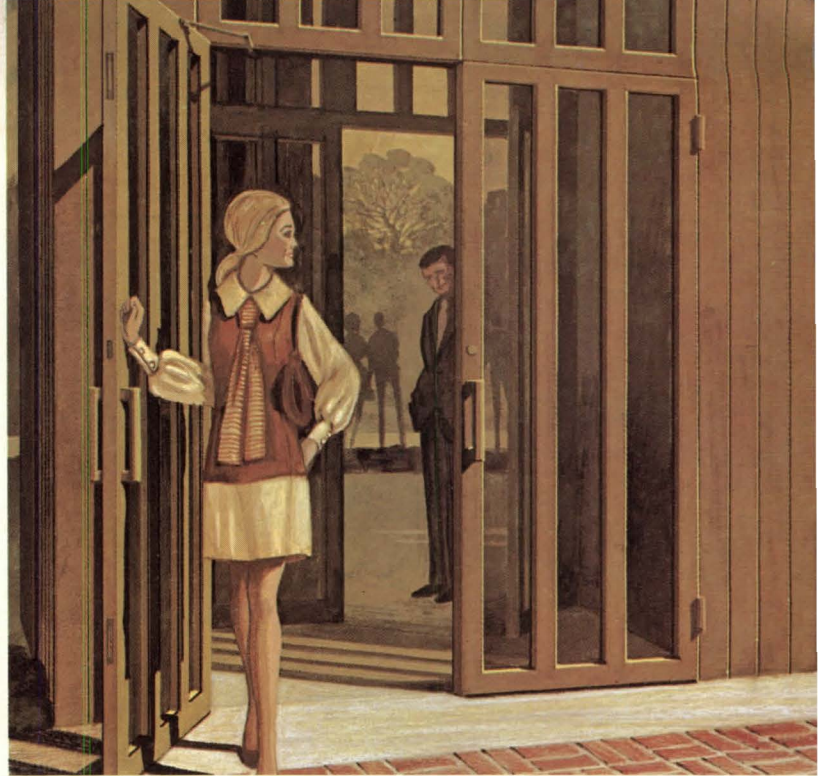
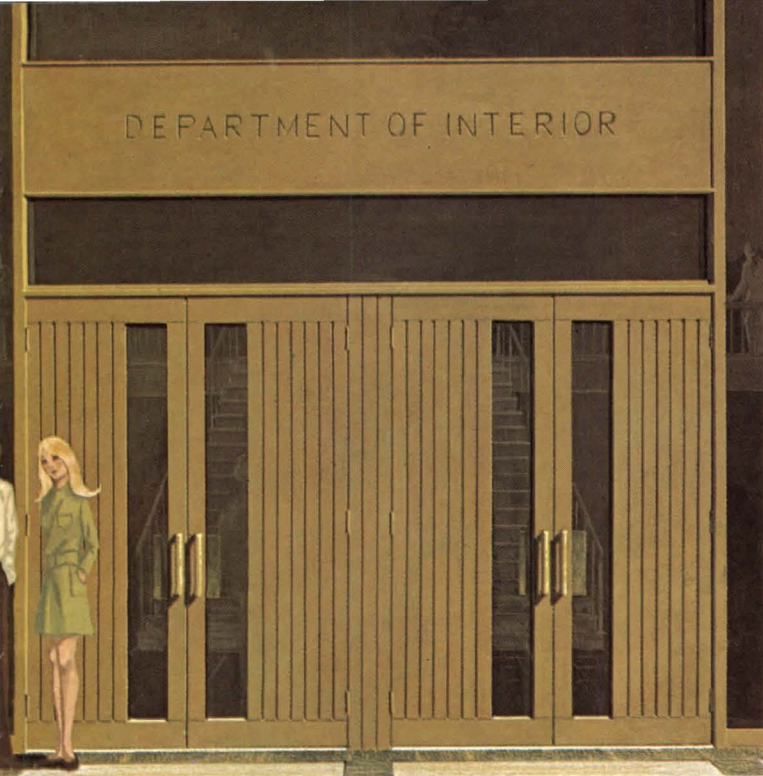
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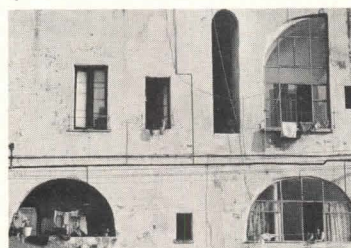
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5



6

Village protected by hill, Skyros, Greece (1). Same village seen from top of hill (2). Stairs to dwelling in Alberobello, Italy (3). Ghorfa dwelling and storehouses, Metanieur, Tunisia (4). Perforated facade in Procida, Italy (5). Waterfront promenade of same town (6).

VILLAGES IN THE SUN, Mediterranean Community Architecture. By Myron Goldfinger. Published by Praeger Publishers, New York. 224 pp. Illustrated. \$18.50.

BY DONALD WATSON

While many of the villages in this volume are well known to architects, others are documented here for American audiences for the first time. The photographs are in a sense as good as "being there," firstly because they show a high level of technical skill—good results are particularly difficult to obtain under the full glare of the North African sun—and secondly, because they are framed with an architect's eye for composition.

The unifying theme of the book—that the villages of the Mediterranean embody architectural lessons of contemporary importance—is neat and serves to justify more than a touristic interest in these intriguing sites. The text, however, reads at times like an afternoon museum lecture, and a euphoric tone takes over where the analysis should be more thorough—perhaps best explained by the difficulty of formalizing the ineffable qualities of anonymous architecture. Nonetheless, Mr. Goldfinger does attempt in his introduction to set forth the lessons of his subject—that elemental building units can be repeated without monotony; that ingenious advantage is always taken of the unique sites (which are for the most part breathtaking in themselves); that "exceptional" forms are the natural expression of important community functions; that a full sequence of spaces and scales create places for community and for privacy; that construction methods and details are executed with straightforward and elegant simplicity; and so on. These are, in short, the qualities that vernacular architecture has always best represented. Mr. Goldfinger uses these qualities for theory building of his own, as a source for esthetic rules for contemporary architectural problems, particularly those pre-

sented by industrialized building components and by the absence of community expression in our urban environments.

Despite the lack of a more rigorous analysis which will be required to show that anonymous architecture deserves more than a romantic idealization, the photographs do succeed in presenting the villages as visual metaphors of totally integrated communities. However, one should not conclude that a community as a functioning social unit is achieved simply by the design of spaces, even if they are executed with a range of public and private scales. This must be considered a fallacy of even the best contemporary architecture unless designers are at the same time willing to investigate the other critical factors that create "community." The Mediterranean examples are, after all, essentially self-contained rural societies in which social rituals and communication depend entirely on physical spaces. It therefore follows that community places built in modern urban settings will not succeed unless they play an equally functional role in community communication and interaction.

The study of these factors will, of course, follow the metaphorical expression of the community environment ideal as argued by books such as this and Bernard Rudofsky's *Streets for People*, and is already anticipated by the writing of A. E. Gutkind, Amos Rapoport, and others. The book lacks a reference to the existing bibliography on these sites, for example Herman Haan's presentation at the CIAM Conference at Otterloo and a number of issues of *L'Architecture Aujord'hui* which describe aspects of the village of Matmata, among others, that would certainly have illuminated the text. Many villages have, of course, by necessity been excluded from this volume, notably the Berber and Souf settlements in North Africa such as Chinini and El Oued, and innumerable sites in the Eastern Mediterranean, but—all the more reason for continued investigation of the subject.

In sum, the photographs speak most eloquently for themselves—architects are, after all, visual animals—and as such, the book deserves the place on the living room table that the publisher of this deluxe edition intended.

Mr. Watson, an architect in Guilford, Conn., practiced in North Africa from 1962 to 1965.



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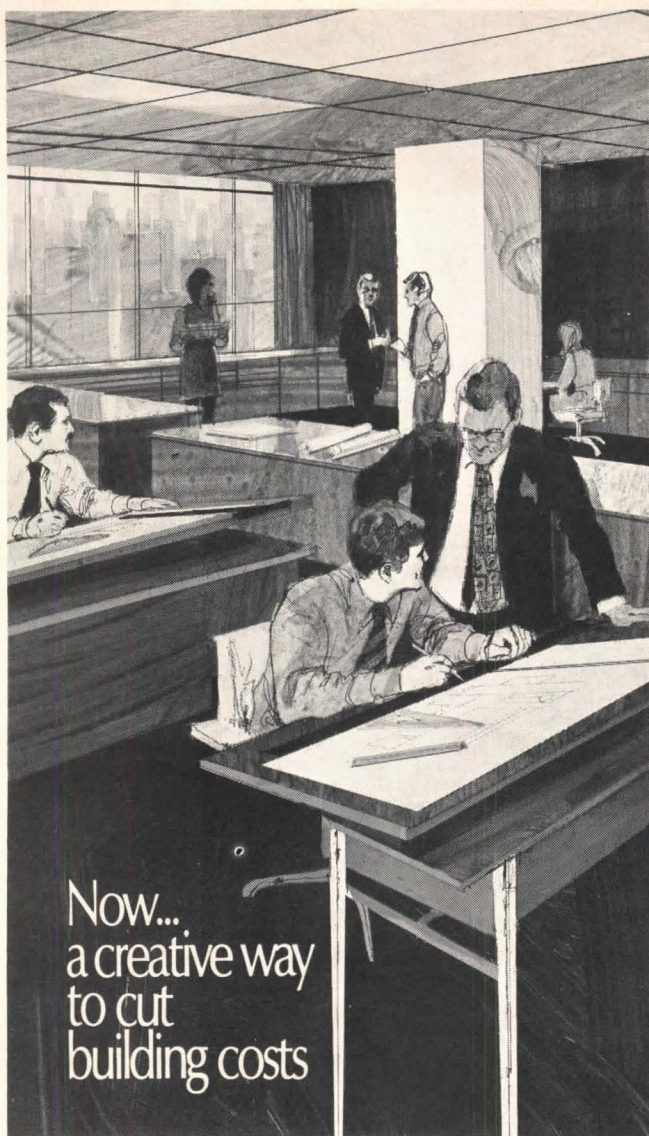


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ACR-14

TECHNOLOGY

New York's UDC launches housing technology program

The New York State Urban Development Corporation is running a state-wide version of Operation Breakthrough (see April '70 issue) and has announced the first ten innovations it will integrate into its housing programs.

Like the federal effort, UDC's program is aimed at introducing new technology into the production of housing. But there are important differences.

According to David Pellish, the program's director and UDC's Housing Technology Officer, the UDC program includes only new technology that has already been manufactured and used, either in the U.S. or abroad. He says that UDC will consider "any product or development" that is more economical than a standard version of equal quality, from a new door-knob to a total building system.

UDC plans to program the selected innovations into the over 10,000 dwelling units that are slated for construction starts this year, thus providing companies with a guaranteed mass market.

UDC will use the Cost Analog System, developed by Tishman Research Corp., of New York City, and Goody-Clancy Associates, of Boston, to evaluate innovation. It uses as its base a standard building, where all the cost components are analyzed by function—not the conventional cost breakdown. The cost of an innovation is then compared to its conventional counterpart.

When the ten innovations selected so far are used in combination, or under appropriate design conditions, UDC says they can cut construction costs up to 11 per cent and erection time 36 per cent. They include:

- Ceramic wall panels with flexible grouting (TiRAMIC), manufactured by Monsanto. Small 1-by 1-in. tiles are chemically joined to form 2-by 2-ft. panels, that may be installed with organic adhesive.
- Dry shaft wall construction, manufactured by U. S. Gypsum Co. This method can be used for stairwells, elevator, vent, and plumbing shafts. Materials in-

clude 2-in. laminated gypsum plank placed into vertical "H" studs and faced with two layers of standard gypsum wallboard on one side.

- Sprayed paint (solo spray), manufactured by Glidden-Durkee, SCM Coatings & Resins, a division of SCM Corp. Spraying this heavy latex paint can complete a two-bedroom apartment in 30 to 45 minutes.

- Metal edge gypsum plank floor system, manufactured by U.S. Gypsum Co. This tongue and groove plank is installed as a welded deck over bar joists.

- Preassembled plumbing wall with fixtures, manufactured by American Standard. Plumbing wall contains DMV piping, fixture carrying plates, etc., supported by light-gauge steel frame.

- Romex Electric wiring, manufactured by all major producers of electric wire and cable. This is non-metallic, sheathed cable, composed of two to four insulated, color-coded conductors, plus an insulated ground wire.

- Single-wythe masonry wall system using high-bond mortar, manufactured by Dow Chemical Co. (SARABOND). SARABOND is a latex additive to types I or III Portland cement mortar. Used appropriately, it increases flexural strength by a factor of at least four over conventional mortar systems.

- Staggered-steel truss system, nonproprietary. Steel framing system uses series of story-high trusses to span between perimeter column lines. Trusses are staggered so floor system is supported by bottom flange of one truss and top flange of next.

- Ventless plumbing drainage system, manufactured by 12 national copper companies represented by the Copper Development Association (Sovent). This is a single-stack venting system for multistory structures. The stack has a special mixer fitting at each floor level, plus a deaerating fitting at the bottom.

- Wide slab floor system, manufactured by United Filigree Corp. (Omnia Franchise Corp. manufactures a similar system.) System consists of a precast floor slab with bottom reinforcing steel, voids (if needed) and partially exposed steel trusses that serve to bond the slab with a poured-in-place structural steel topping. The Filigree slab therefore replaces slab formwork and bottom 2¼-in. of a concrete flat slab, including reinforcing steel.

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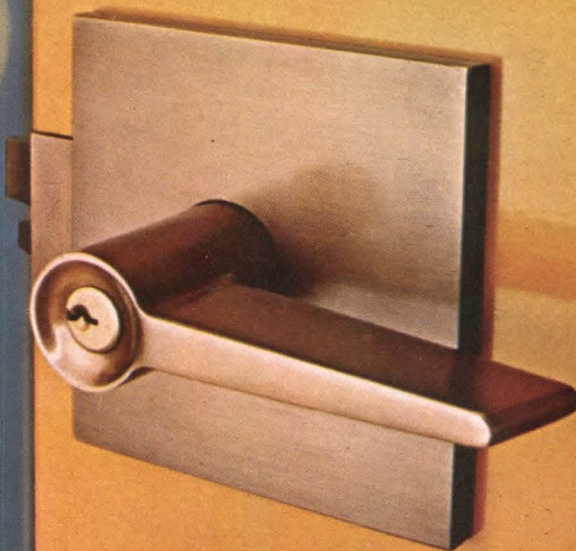
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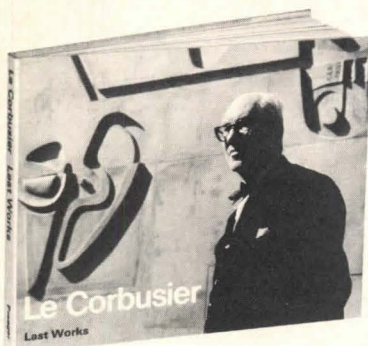
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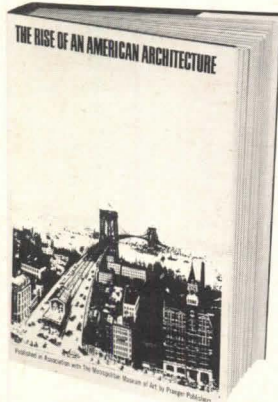
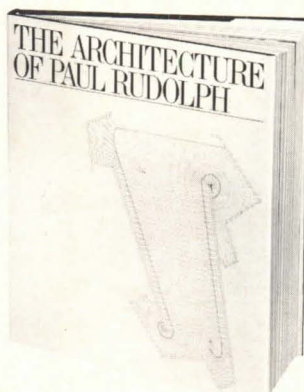
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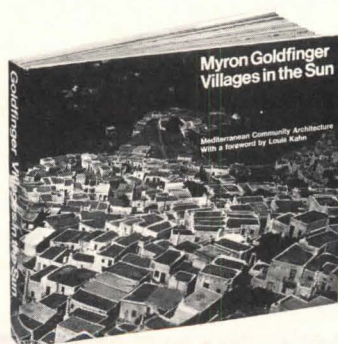


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ECOLOGY AND ENVIRONMENT

(continued from page 49)

were opposed to the program, it is safe to say the enormous investment would never have been made.

Since 1956, when construction of the Interstate System was started under the administration of President Eisenhower and then-Vice President Nixon, some \$38.8 billion has been invested on this program. Work completed has cost \$28.1 billion, while work costing \$10.7 billion is authorized or underway. The federal share is 90 per cent of the cost of the 42,500-mile system.

While this has been going on, improvement of federal aid primary and secondary routes and their urban extensions has not been neglected.

The state of New York, for example, is reaping valuable socio-economic benefits from the federal aid highway program. Since 1956, Interstate System projects have been completed in New York at a cost of \$1.5 billion, while work is underway or authorized on \$583-million worth of projects.

Without question, the most important benefit of the Interstate System is the lives that are already being saved and will continue to be saved. A report issued recently by the Federal Highway Administration disclosed that in New York in 1968, 1.60 persons were killed for each 100 million vehicle miles of travel on Interstate highways, compared with 5.42 on

other roads. For the nation, the Interstate fatality rate was 2.99 compared with 5.62.

The nation's highway program has paid off beautifully, both in transportation and non-transportation benefits. Those associated with the program have the right to feel they have made an important contribution to their country's welfare.

But, at the same time, I don't want to leave the impression that highways alone can solve the nation's problem of moving people and goods. We must recognize that in view of the burgeoning population and number of motor vehicles, it can't.

So complex is our country's transportation problem that our only hope for moving people and goods efficiently from one place to another is by a total transportation system. This system requires the utilization of every possible mode of transportation which can make a contribution. It calls for the compatible interrelationship of highways, skyways and railways, looking to each mode to perform the task it does best.

The goal of total transportation is not easily obtainable but a start has been made. President Nixon has submitted to Congress the Public Transportation Bill of 1969, which calls for a \$10-billion investment over a 12-year period to assist cities and transportation authorities to build, expand and extend public transportation in urban areas.

We who are directly interested and responsible for providing and maintaining an adequate overall highway system should support this measure because it is needed, if we are to avert transportation chaos in this country.

All highway people must recognize that despite the top-notch highway system we have in the United States, highways alone are not the answer to our total transportation needs. All modes must be improved and made more effective than they are today. Each mode must coordinate with the other modes. There must be a team approach for the benefit of all.

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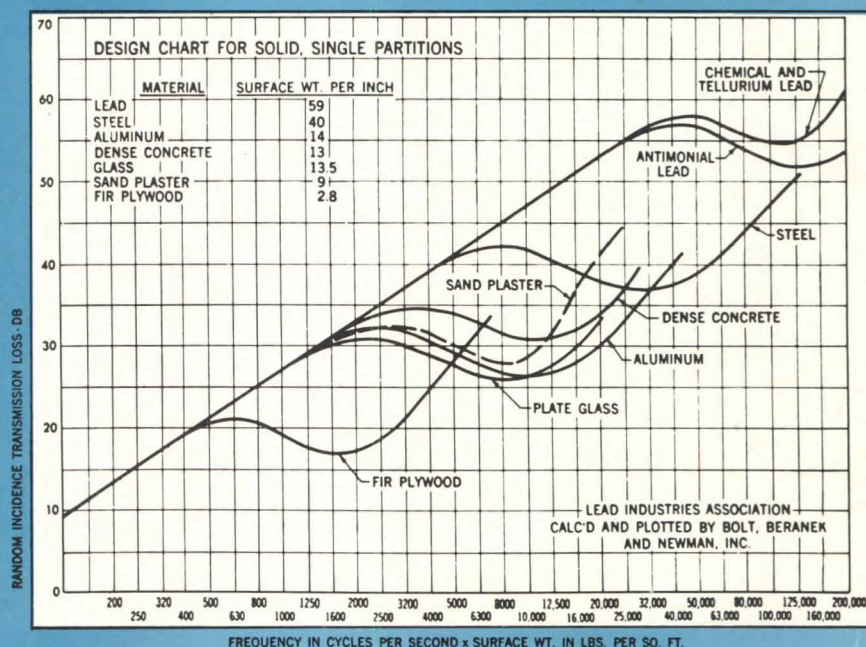
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Solid Plaster	18	3.75	4.8	2	1/16
Cinderblock	22	5.5	4.0	6	3/32
Plaster on studs	12	7.5	1.6	4-6	1/8
Plaster on double studs	16	11.0	1.4	5-8	3/16
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¹as employed in a movable partition, for example.

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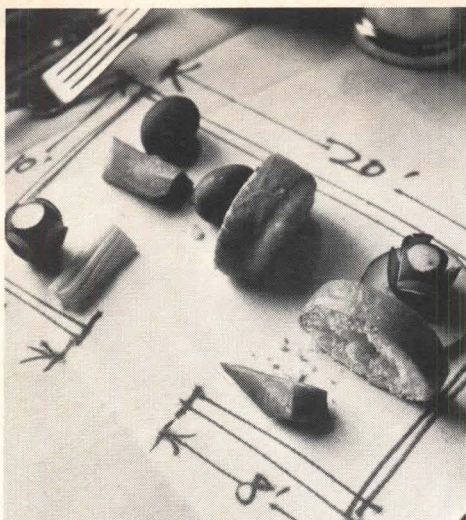
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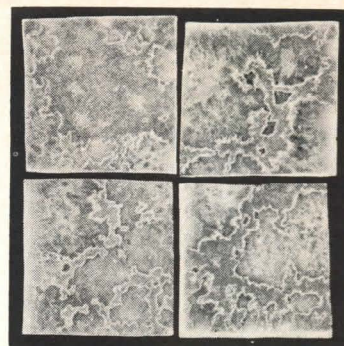
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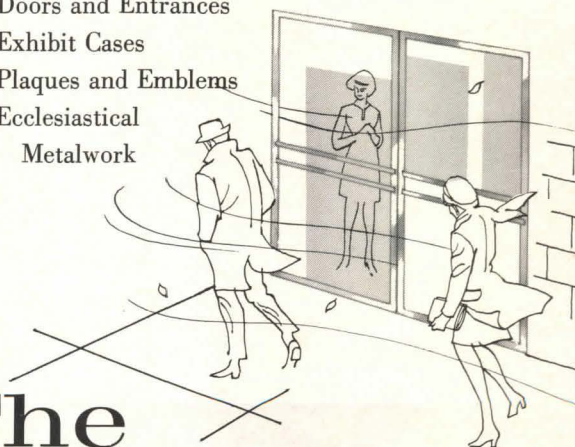
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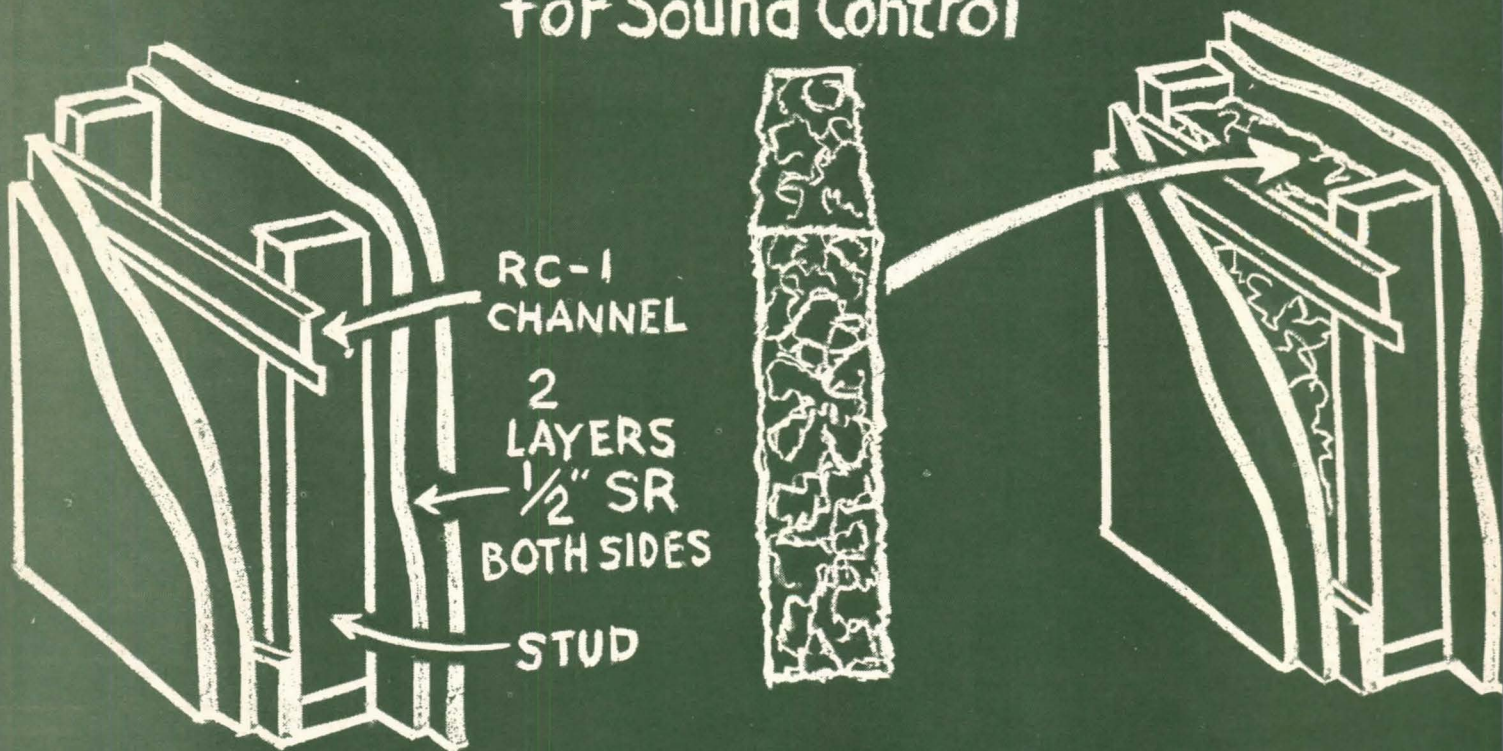
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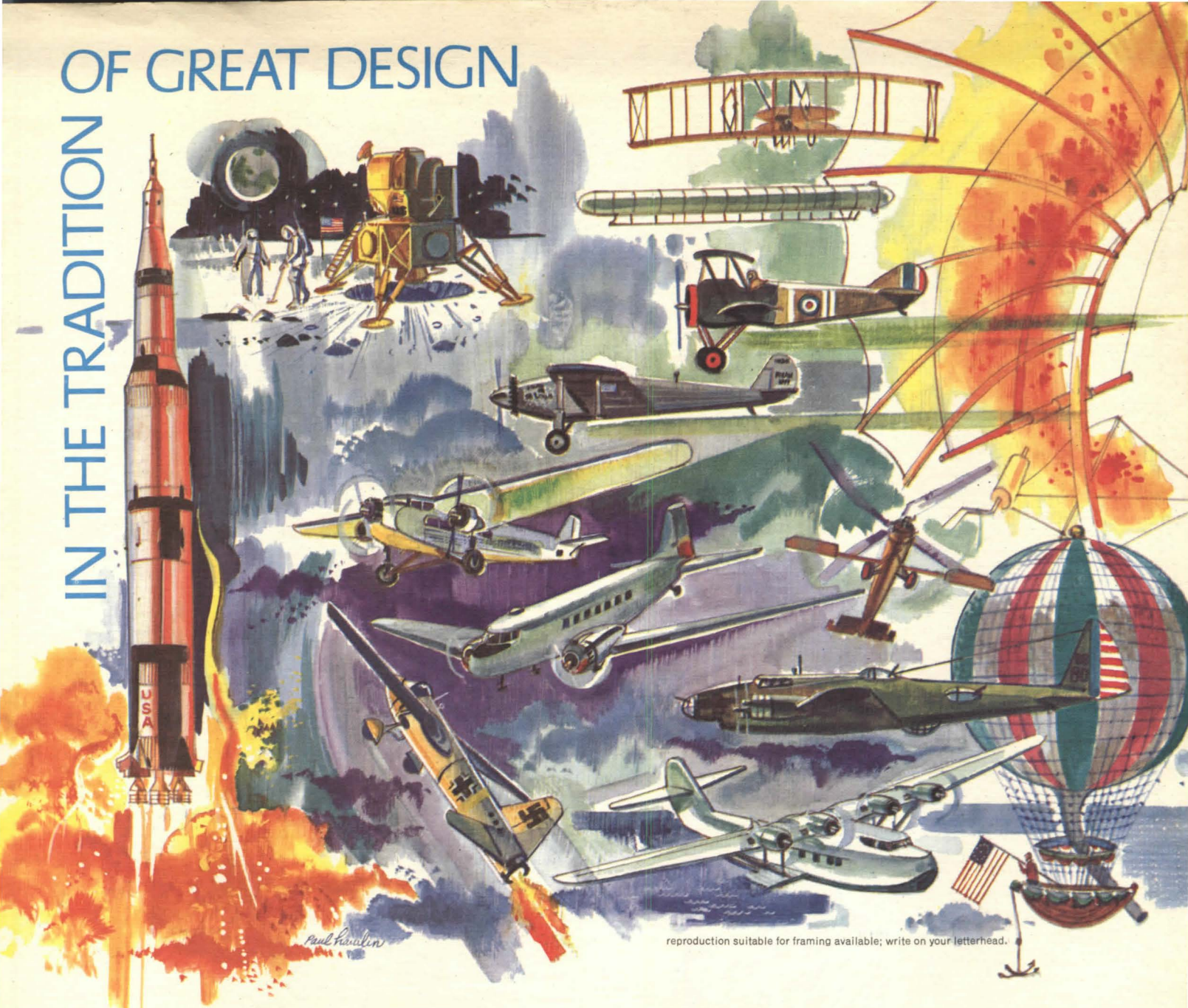
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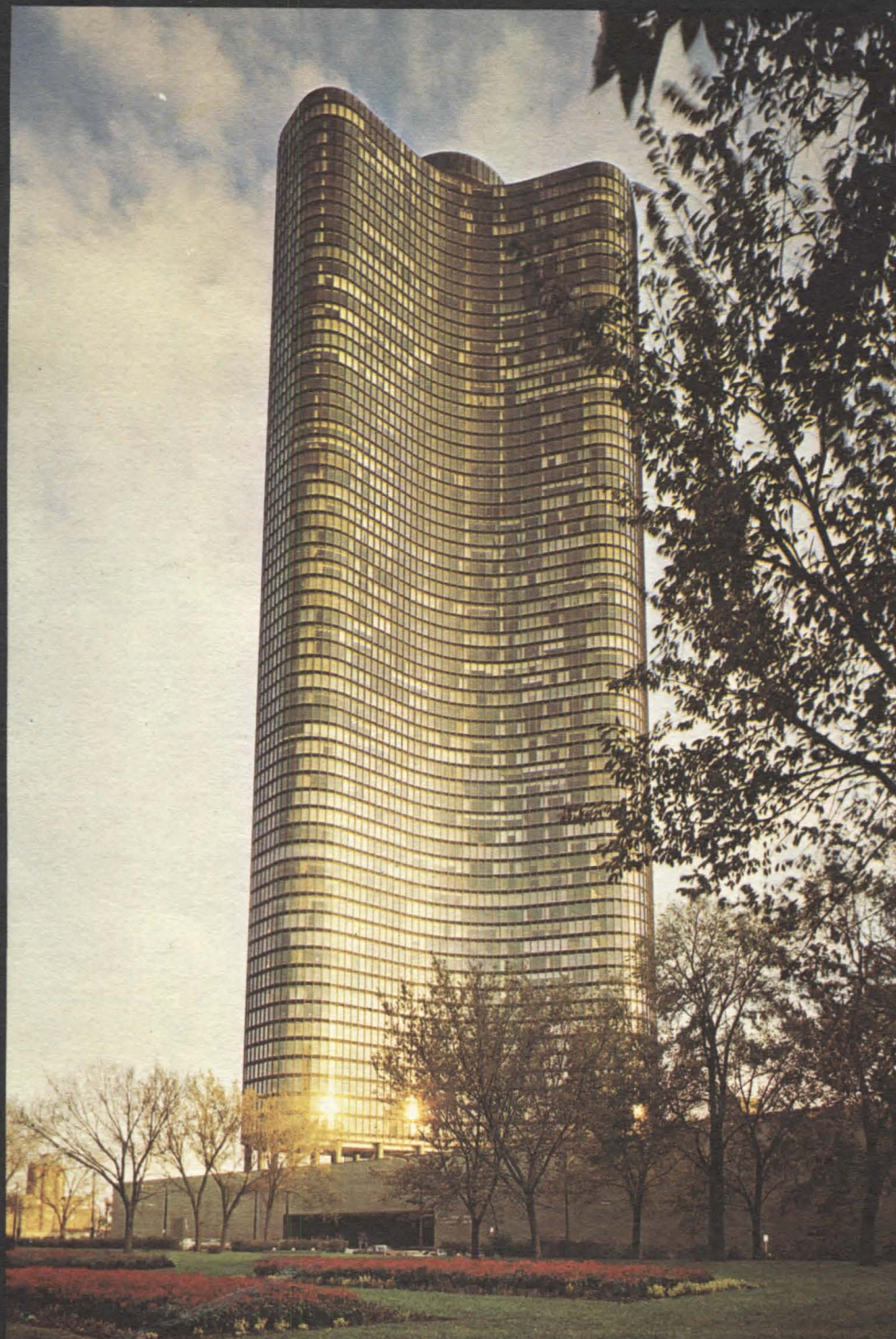
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